THE UNIVERSITY OF CHICAGO

THE IMPACT OF THE INDUSTRIAL REVOLUTION UPON NEW TESTAMENT CRITICISM

A DISSERTATION

SUBMITTED TO THE FACULTY OF THE DIVINITY SCHOOL

IN CANDIDACY FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

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CHICAGO, ILLINOIS

AUGUST, 1938

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INTRODUCTION

From the term "Industrial Revolution," as from other terms of a somewhat general nature, there arises the possibility that its use may be misunderstood. Since its connotations ordinarily suggest a complete change in a comparatively short period of time, many economic historians have preferred to use the term "evolution," thinking thereby to express a belief that the thorough economic changes which manifested themselves after 1750 came not suddenly, with the sweep of a "revolution," but as the result of long processes, whose culmination one would naturally expect to issue in extreme changes such as the period mentioned exhibits. This contention seems to be well-founded. Too often writers have tended to extract this period of most rapid industrial change from its setting and industrial background. Or, to change the figure, they have often regarded it as an industrial comet which suddenly appeared on the horizon and with like suddenness disappeared.

A cursory study of the tremendous metamorphosis wrought in social and economic life by the advent of the machine, however, seems to justify the application of the term "revolution" to the period whose terminus a quo may be roughly stated as the year in which James Watt changed an interesting experiment into an industrial force. In that period the forces tending toward industrial capitalism reached a point of commanding expression, industry reached a point of pre-eminence in national life, and large industrial communities arose to challenge the older solutions of social problems. While the long roots of economic change reach

back into centuries of slow experiment and cumbersome method which one would call evolutionary, yet the tremendous increase in the rate of change after 1760 and its effects upon national life thoroughly justify the concept of revolution. The term "Industrial Revolution" as used in the present study designates simply the period of more rapid industrial change in England, France, and Germany occasioned by the introduction on a widespread scale of power machinery into industry.

For the purpose of the present study, New Testament criticism is defined to involve problems of origins, authorship, literary and historical relationships, early history, and interpretation. The history of textual criticism lies outside the range of this study, and will therefore not be treated.

It will be the method of this study to picture the main factors in the Industrial Revolution and other movements of the time, and to treat with them the growth of scientific New Testament criticism, noting the elements of industrial and intellectual progress which vitally affected New Testament study. It is not to be expected that this would involve any fresh approach to industrial history; its dependence upon reliable economic historians is at once evident. Any possible value lies in its attempt to correlate two phases of culture which are not ordinarily associated. In the interest of expedience, the writer has confined the study to European New Testament criticism prior to 1900.

CHAPTER I

INDUSTRIAL MOVEMENTS PRIOR TO 1760

While it is difficult to designate outstanding factors and forces in the development of industrial life and almost impossible to brand the development of any one geographical sector as typical, still it seems safe to observe that in England one witnesses industrial changes less disturbed by instability of national life than was true of the continental nations. Certain it is that the fruits of long industrial growth ripened first in England's Industrial Revolution after 1760, and that other nations were in a sense debtors to her for many elements in their later rapid industrial growth. Since her growth was more rapid and her development followed a more logical sequence, it has seemed wise for the purposes of the present sketch to devote major attention to England's industrial life.

It is important to note at the beginning that industry and its problems formed an appreciable part of national life even in the later years of the period commonly called the Middle Ages. In these years England enjoyed the distinction of being the chief wool-producing country in the north of Europe, being favored by two outstanding factors: her climate was favorable for sheep-raising, and she was not dislocated by any such series of internal wars as harassed North Europe.[1] Even though by 1326 there was

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[1]H. de B. Gibbins, The Industrial History of England, ed. J. F. Rees (28th ed.; London: Methuen and Co., 1926), p. 62.

opposition to the exportation of materials for making cloth,[2] the country continued to send nine-tenths of its wool to the looms of Bruges and Ghent.[3] The people of The Netherlands were at this time the great manufacturers of the world, being acquainted with arts and processes to which the English were strangers; the latter were, however, building a considerable manufacturing industry, chiefly of coarse cloths. This work was of the home type, carried on in the people's own cottages for home consumption. English textile industry received its first major impetus under the guidance of Edward III, who encouraged Flemish weavers to settle in England. By 1362 there were numerous alien weavers in London;[4] as early as 1315 worsted manufactures were so prominent that a special cloth searcher was appointed to inspect the worsted stuffs of Norwich and district.[5] Dyeing and fulling came into prominence in England during the time of James I.

The latter part of the fourteenth century thus marks a period of transition in English industry, a transition which began to be felt in the agricultural sections. Sheep farming made steady progress throughout this and succeeding periods until in the fifteenth century one can trace the beginnings of the enclosure of land for the extension of grazing. The effects of continued enclosures upon agricultural labor were by the year 1517 thought to be not altogether beneficial, for Henry VIII ordered

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[2]"Prohibition of Export of Materials for Making Cloth (1326)," English Economic History: Select Documents, ed. A. E. Bland, P. A. Brown, and R. H. Tawney (London: G. Bell and Sons, 1914), p. 186.

[3]Gibbins, op. cit., p. 63.

[4]"Alien Weavers in London (1362)," English Economic History: Select Documents, pp. 195-197.

[5]Gibbins, op. cit., p. 67.

an investigation of the reasons underlying the practice, suggesting that in many cases enclosures led to private aggrandizement and public loss.[6]

Mines and metallurgy likewise attracted the attention of the rulers. The French king Louis XI, in the years 1461-83, was not content to revive the old industrial set-up of drapery, linen cloth trade, tanneries, hardware and cooperage; he was ambitious to create new industries. His influence was exerted mainly in connection with the iron mines, the mines of argentiferous lead, the copper mines, and the exploitation of auriferous gravel. Consumption was far exceeding the supply of coal which could be taken from the mines in the basin of the Loire.[7]

The industrial developments of the fifteenth century and later had their effect upon labor. In spite of the royal efforts to confine certain industries to particular towns, new industrial villages in rural districts depopulated many of the older towns. This shift in population was the result of two causes, the growth of sheep farming and the industrial disabilities imposed upon dwellers in towns, in consequence of the privileges of the gilds.[8] Master manufacturers organized in country places little communities solely for industrial purposes, so arranged as to afford greater scope for the combination and division of labor. There was closer association of master and workmen than in the later factory system, but the germs of the modern arrangement were there.

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[6] "The Commission of Inquiry Touching Enclosures (1517)," English Economic History: Select Documents, pp. 262-64.

[7] H. Pigeonneau, Histoire du commerce de la France (Paris: Libraire Leopold Cerf, 1887), I, 421.

[8] Gibbins, op. cit., p. 77.

The years previous to 1500 witnessed along with the rise of the merchant and the industrial leader the decline in power of the nobles and landowners. The merchants and manufacturers supported and were in turn favored by the early Tudor sovereigns, who hastened the decaying power of the feudal lords by a policy directly favorable to the middle class. In France, as in England, merchants and workers had grown with the royalty and by it, for it had contributed to assure order which is the condition of work. French kings early endeavored to set the stage for commercial and industrial progress, sponsoring fairs, stimulating river commerce, protecting merchants, and signing treaties of commerce.[9]

Thus it is evident that even previous to the year 1500, which is generally taken as the point of transition from the Middle Ages to modern times, the world of industry and commerce was giving definite indications of changes which in later centuries would become more radical. There was increasing attention to economic and commercial policies; labor was definitely shifting toward concentration in industrial groups and away from purely agricultural pursuits, and the merchant and industrial class was displacing feudal aristocracy in places of political power.

The years following 1500 marked an era of discovery and tremendous colonial expansion. Countries became acutely aware of their opposing interests, nationality sprang to life with rivalry abroad and attempts to achieve unity at home. Colonial expansion found a great part of its motivation in the new markets which it created. One of the principal inducements for the series of settlements of colonists was an outlet for home-manufactured

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[9]Pigeonneau, op. cit., I, 424 f.

goods.[10] The products of American industry affected European policies. During the time of Elizabeth and her successors the continued influx of silver from America raised prices and so lowered the value of fixed incomes, with the result that the crown resorted to many doubtful expedients to get money.[11] Constant wars for the control of trade and colonies brought English conquests in the new world, so that both Spain and France were severely checked.[12]

Trading had thus definitely overstepped the former narrow limits of town, county, and nation. Companies of "Merchant Adventurers" were formed to trade with various countries, most of them receiving a government charter and patronage. The Russia or Muscovy Company obtained recognition from the government in 1554; in 1581 the Levant or Turkey Company was formed; in 1588 a Guinea Company began trading; in 1600 the greatest of them all, the East India Company, was chartered. The goods which were manufactured in scattered villages or town suburbs by the domestic manufacturers were gathered by these merchants and sent abroad in ever increasing amounts. The total value of English exports in 1600 was about ten million dollars; at the close of the century it was some thirty-four millions, and in 1750 about sixty-three millions.[13] The great chartered trading companies endeavored to promote the

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[10] E. P. Cheyney, An Introduction to the Industrial and Social History of England (New York: The Macmillan Co., 1917), pp. 190-92.

[11] Kingston Derry, Outlines of English Economic History (London: G. Bell and Sons, 1932), p. 83.

[12] Henri Sée, "Le commerce des toiles du Bas-Maine dans le première moitié du xviii[e] siècle, d'après les papiers de Posteau-Duplessis," Mémoires et documents pour servir a l'histoire du commerce & de l'industrie en France, ed. Julien Hayem (Paris: Libraire Hatchette et Co., 1911-29), X, 47 f.

[13] Cheyney, op. cit., p. 189.

sales of English products in distant markets. Not only in foreign trade, however, but in domestic disposal of manufactured goods there arose middlemen whose especial duties were the promotion of sales. Economic forces were drawing a sharp distinction between industrial and trading functions, the actual producer being no longer in direct touch with the consumer. There was a differentiation of classes within the company; the trading section had real control, while the small masters were rarely consulted. This is the characteristic form of the Elizabethan Company.[14]

When the government heard the complaints of the producers and dissolved the Elizabethan Companies, efficient middlemen came within a short time to be the capitalists of industry. In the woolen industry, for instance, they bought wool in large quantities from the farmers and sold it to clothiers, where they did not act as clothiers themselves. Then the clothiers distributed the wool to the spinners, collected the yarn and passed it on to the weavers, and so on until the process was complete. The finished article was disposed of by other classes of middlemen, such as travelling dealers, traders selling on commission to London factors and warehousemen, who in turn sold to shopkeepers, and merchants who bought for export. These developments of capitalism were compatible with the domestic system of industry; large profits were derived by devoting all their attention to the market. As their position became stronger they reduced the domestic workers to more or less complete dependence upon them.

Practically the same conditions were true in France, where the small workers and artisans had been reduced to virtual dependence upon the clothier and the merchant. The strike of 1744 at

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[14]Gibbins, op. cit., p. 89.

Lyons was largely occasioned by a royal decree which favored the merchants to the hurt of the artisans. The latter felt that the merchants were enriching themselves on the products of others' work.[15]

The centuries following the year 1500 were marked by countless regulations passed by the state to secure what it thought to be the harmonious operation of the nation's industries and protection from foreign competition. Much governmental policy tended to check the changes in progress and to protect the gild system and craft organization. Although the gild authorities were in many cases partially responsible for the enforcement of the regulations, the laws themselves were in a very true sense the work of the government and not entirely the desires of the gild leaders. This is particularly true of the "Statute of Artificers," passed early in the reign of Elizabeth.[16] This code was a more inclusive revision of all previous statutes of laborers.

The government administered a heavy blow to the gilds when, under Edward VI, it confiscated all property given them by members on condition that the gild would always support a priest and have mass celebrated for the soul of the donor and his family.[17] Another evidence of government interference in the conduct of industrial life is seen in its attempts to grant monopolies of various kinds.

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[15]Julien Hayem, "Les grèves dans les temps modernes et particulièrement aux xvi^{e} et xviii^{e} siècles," Mémoires et documents . . . ., I, 82.

[16]"The Statute of Artificers (5 Eliz. c. 4, 1563)," Tudor Economic Documents: Being Select Documents Illustrating the Economic and Social History of Tudor England, ed. R. H. Tawney and Eileen Power (London: Longmans, Green and Co., 1924), I, 338-50.

[17]"Act Confiscating the Religious Property of Gilds (1 Edward VI c. 14, 1547)," Tudor Economic Documents, I, 117-19.

External more than internal trade experienced the regulating finger of government. The prosperity of one country was thought to be imcompatible with that of another. If one nation profited by trade, it seemed to do so at the expense of all its neighbors,[18] for the market seemed to be narrowed by the amount of goods any one country sold. This theory was the foundation of the mercantile system. "It had its origin in the spirit of Nationalism--the idea of self-sustained and complete national life--which came in with the Renaissance and the Reformation."[19] That sovereigns of the great trading countries leaned strongly toward this policy may be seen from a cursory observation of their regulations on foreign commerce.

Farm interests, too, felt the effects of government policy. The policy of enclosure, which militated against the interests of the smaller landholders, evoked a series of laws which could never be enforced. The gentry were the agents of the Tudor government in such affairs and were themselves enclosers.

Tendencies toward close governmental supervision and control of industries prevailed in France and Germany. It was a royal regulation of June 9, 1744, favoring the merchants to the hurt of the artisans, which provoked the strike at Lyons.[20] Royal ordinances attempted to regulate the mining and metallurgical interests under Philip the Long, Charles VI, Henry II, and Henry IV. In 1680 Colbert made public ordinances which held sway until 1810.[21]

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[18]Arnold Toynbee, Lectures on the Industrial Revolution of the Eighteenth Century in England (London: Longmans, Green and Co., 1890), p. 76.

[19]Ibid.

[20]Hayem, op. cit., I, 82.

[21]J. Levainville, L'industrie du fer en France (Paris: Libraire Armand Colin, 1922), p. 28.

The mining industry of Germany in this period suffered the distinct disadvantage of laws which were not adapted to circumstances. Inequality of rule and diversity of legislation held in check industrial activity; in Prussia, for instance, sixteen regions had different mining statutes.[22] From 1647 to 1653 the direction of mines in the Prussian parts of the Ruhr was confined to a captain of the cavalry. The state of the collieries was lamentable. Only after 1730 did the Prussian government begin to take an interest in the exploitation of this and kindred industries.[23] In 1783 Frederick II placed renewed emphasis upon the search for competent people to operate the mines.[24] The government was definitely interested in the conduct of industry and commerce.

We now glance briefly at conditions within the individual industries, seeking to estimate their importance as to the employment of labor, the use of capital, improvements in method through the use of machinery or otherwise, and importance to the general industrial welfare of the several countries in the years prior to 1760.

(1) The building industry found its largest single contracts in the construction of great public edifices, where as many as three or four hundred men were often found on one payroll. By nature this work lacked any semblance of a permanent plant; the building itself was at once the product and the plant. The rediscovery of brickmaking led to improved dwellings in England after 1450. Numerous tile-kilns in France were a source of steady income to manufacturers, and the French people showed a

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[22]Pierre Benaerts, Les origines de la grande industrie allemande (Paris: F. H. Turot, 1933), p. 407.

[23]Maurice Baumont, La grosse industrie allemande et le charbon (Paris: Gaston Doin et Co., 1928), p. 42.

[24]Ibid., p. 531.

growing preference for materials of this kind over the less durable ones.[25] The latter part of the fifteenth and the entire sixteenth centuries were epochs of great constructions and repairs in France.[26]

(2) The growing importance of commerce in the period under consideration is an indication that the shipbuilding industry was likewise growing. The collieries employed river traffic almost exclusively. Shipbuilding was carried on in shipyards which employed craftsmen rather continuously. Sometimes the work upon the sails and the ropes was done through the home system of manufacture, by which the worker labored under contract to furnish the products specified; sometimes the textile workers were simply the employees of the large shipbuilders who furnished the materials and the workshop.

(3) Salt, used mainly to preserve food, was manufactured predominantly from natural evaporation of sea water.[27] France and Germany exceeded by far the salt output of England, for natural salt springs were more abundant. In none of the salt works were many laborers employed, nor was there much capital needed after the original outlay had been financed.

(4) The eighteenth century saw renewed interest in the development of pottery. English pottery owes its improvement largely to the efforts of the Dutch and Huguenot immigrants of the sixteenth and seventeenth centuries. There were a great

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[25]Yvonne Bezard, La vie rurale dans le sud de la region parisienne de 1450 à 1560 (Paris: Firmin-Didot et Co., 1929), p. 179.

[26]Ibid., pp. 179 f.

[27]R. B. Westerfield, Middlemen in English Business, Particularly between 1660 and 1760 (New Haven, Conn.: Yale University Press, 1915), p. 243.

many master-potters throughout France during the reign of Louis XV. Government decrees regulated the widespread practice of the potter's art.[28]

(5) Entering the industrial organization of every country at this time were certain newer industries such as alum, printing, paper-making, cotton manufacture, sugar-refining, potassium nitrate and gunpowder, and glassmaking. Alum factories usually employed from forty to sixty workers, and required considerable capital in advance. The art of printing was new in the years 1470-1560; at the latter date there were fifteen presses in Paris. The original cost of a press required some capital; in addition, the printer had to hire four to eight people to operate it. The manufacture of paper rose to prominence with the printing press. English paper-making prospered by the influx of foreign workmen during the religious wars on the continent. French paper factories showed wide distribution within the eighteenth century.[29] Improvements were numerous, some of the major technical advances having crossed the boundary from Holland.[30] In the newer paper establishments water-power was used to operate large hammers which beat the paper. Sugar-refining was widely distributed over England, France, Holland, and Germany. Continental countries far outstripped England in the manufacture of saltpetre and gunpowder and the casting of cannon. The English, too, had been backward in the manufacture of glass, and in the late sixteenth century it still seemed hampered by want of fuel. Glass manufacture was

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[28]Germain Martin, La grande industrie en France sous le regne de Louis XV (Paris: Albert Fontemoing, 1900), pp. 141-43.

[29]Émile Isnard, "Les papeteries de Provence, au xviiie siècle," Mémoires et documents . . . ., IV, 40; Martin, op. cit., pp. 147 f.

[30]Martin, op. cit., pp. 147 f.

also curtailed in France for fear of too rapid deforestation, but the exploitation of coal mines after 1730 brought a relaxation of restrictions.[31]

(6) By far the most important of all English industries were the textile manufactures, of which woolen goods formed the most considerable part. Bishop Berkeley, writing in 1737, regarded the woolen manufactures as the basis of England's wealth.[32] In 1701 woolen exports were worth £2,000,000, or more than a fourth of the whole export trade; by 1770 they were worth £4,000,000, between a third and a fourth of the whole.[33] Thus in the half century or more preceding the Industrial Revolution production of woolen goods not only showed tremendous increase in volume but also assumed a more dominating place in the nation's industry. What were the conditions under which the textile trades were thus growing?

In connection with this manufacture a new kind of industrial organization had begun to develop which, when it was completed, was known as the home or domestic system. There arose a class of merchants or manufacturers known as "clothiers" or "merchant clothiers" who furnished the capital and assumed charge of all processes involved in converting wool into woolen goods and in marketing the finished product. They purchased the raw material, gave it out to carders or combers, spinners, weavers, fullers, and other craftsmen, paying them for their respective parts in the process of manufacture, and themselves disposing of the product at home or through export. Thus arose a new class of employers who put the master weavers or other craftsmen to work for wages. Not only was this true of the woolen industry but

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[31] Ibid., pp. 149-51.

[32] Cited by Toynbee, op. cit., p. 46. [33] Ibid.

also of trades not possessing the intermediation of a new employing class, mattress makers, rope makers, tile makers, and other artisans. In a restricted sense, the clothier was not a manufacturer but an organizer of the manufacture, of the labor, and of the distribution of materials. His shop was a neighborhood, a village and its environs. Not until a few decades before 1760 did he assume the ownership of the tools of manufacture, and even then they were leased out to the artisans in his employ.[34] Defoe's tour in 1722 revealed to him that it was not extraordinary to find clothiers in Wiltshire worth from £10,000 to £40,000 and that many of the great families of gentry had risen to wealth and rank in the capacity of clothier.[35]

The textile industry in France, although older than that in England, was hampered by wool shortages. Private textile industries were developing along much the same lines as in England: industrial villages were arising under the predominance of the domestic system. The woolen industry had from the Middle Ages attained to great importance in Germany and its products constituted one of the most considerable elements of commerce of the Hanseatic cities. Work was largely done by masters under a form of the domestic system.[36]

(7) Second in importance only to the textile manufactures was the mining industry. So many new uses for coal were developed after the middle of the seventeenth century that the coal trade showed enormous increases.[37] Coal-owner was the technical

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[34]Westerfield, op. cit., p. 273.

[35]Daniel Defoe, A Tour thro' the Whole Island of Great Britain (London: J. Osborn, 1738), II, 35.

[36]J. H. Clapham, The Economic Development of France and Germany 1815-1914 (Cambridge: University Press, 1921), p. 92.

[37]Westerfield, op. cit., pp. 221 f.

name applied to the person who pushed down the shaft and had the expense of raising the coal. He was the mine owner or lessee, the capitalist employer, mine organizer and coal producer. These mine operators and manufacturers came into prominence in the eighteenth century.

The seventeenth century saw the rise of many large owners of lead mines, since the share system made it easy for capitalists to acquire large holdings. Seldom did these rich owners work their mines; they usually reduced to the wage-earner status those smaller operators who for one reason or another had sold to them.

Developments in French mining were of the same general nature as those in England, but methods were slightly in advance.[38] The mines showed rather wide distribution during the period under consideration.[39] Technical advances, such as the use of powder in deepening the mines, appeared in sections as early as the sixteenth century.[40]

The chief basins exploited in Germany appeared rather early. In 1312 appears the first notice of Westphalian coal;[41] the coal of upper Silesia is not mentioned before the Prussian annexation of 1741;[42] the silver and iron mines of Gottesberg and Grablau in lower Silesia were exploited in the fifteenth century, as were the coal mines.[43] These constitute but a few of the mines productive before 1760.

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[38] M. P. Destray, "Les houilleres de la machine au xvi^e siècle," Mémoires et documents . . . ., IV, 161 ff.

[39] Martin, op. cit., pp. 158-160.

[40] Levainville, op. cit., pp. 26 ff.

[41] Baumont, op. cit., p. 40. [42] Ibid., p. 61.

[43] Ibid., p. 71.

(8) Attention has already been called to the importance of the metallurgical industries. These manufactures were conducted in a paternalistic manner under a domestic system where the workman entered into bond to cover advances of tools and iron, doing the work with the help of apprentices at his own home or workshop.

The growth of manufactures of all kinds had its effects upon agriculture and its problems. With the development of English woolen manufactures, the owners of even moderate farms began to use portions of their holdings for the raising of sheep, and the process of enclosure went on apace. Enclosure continued steadily throughout the seventeenth and eighteenth centuries, although sheep farming was no longer the dominant cause of the practice after 1620. Already there were indications of the agricultural improvements which were destined to inaugurate the second and greatest period of the movement.[44] By the year 1700 the condition of the agricultural laborer had considerably improved, together with the general improvement of agriculture.

At the outbreak of the Revolution France had never undergone a change comparable to the enclosure movement in course of completion in England. There were enclosed districts, but no connection existed between enclosure and agricultural improvement. Enclosed fields were generally not the recent work of improving landlords, but were inherited, with the system of management, from a remote past.[45] The West German open-field system had changed less than that of northern France since the Middle Ages. It is true that in the German-Danish provinces of Schleswig-Holstein there had been an enclosure movement in the

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[44]Gibbins, op. cit., p. 111. [45]Clapham, op. cit., pp. 6 f.

eighteenth century. Eastern Germany had seen during the sixteenth, seventeenth, and eighteenth centuries eviction and consolidation of land in the lords' hands.[46]

In England, between 1689 and 1776 there were very definite signs of the beginning of capitalistic farming. Although wealth had been applied to industry and commerce at an earlier period, large funds were not applied to the improvement of the soil until the eighteenth century. Early in the eighteenth century we find signs of a middle class in the country who were capitalists and employers of labor, but who did not themselves own land, and did not engage in the actual work of the farm with their own hands.

In the discussion of the various industries, little attention has been given to technological advances and the growing use of machines. In the years following 1500 England used noticeably less machinery than did the promoters of industry on the continent. In tanning, fulling, and in grinding corn there was use of water power for revolving wheels or pounding hammers; windmills were in some cases substituted. The chief problem of the mines was drainage, which was only partially solved by the extensive use of tunnels. Wheels with gears were employed in many cases to drag out the water by bucketfuls, the motive power furnished by water wheels or horses. The metallurgical industries, particularly on the continent, resorted to water power to drive their hammers or bellows. Where pumps were used in the salt industry, they were usually operated by water power; some suction pumps began to make their appearance in mines.[47]

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[46] Ibid., p. 36.

[47] W. Cunningham, The Growth of English Industry and Commerce in Modern Times (Cambridge: University Press, 1890-1903), II, 362-65.

The period from 1640 to 1740 was marked by several advances in technology and improvement in machines. The mines profited by greatly improved boring rods which made possible accurate estimates of the thickness of seams. By 1740 the cementation process of making steel was widely employed. The efficiency in transportation of coal from the collieries to the keels was greatly increased by the use of rails for the wagons or carts, the rails in some cases running as much as eight miles. Gunpowder was found to be useful in blasting mines. The introduction of calico printing was a determining factor in requiring true factory-type work; the huge presses were expensive and forced the worker to abandon the small workshop. Silk-throwing machines were largely operated by water power, bringing a slight concentration of labor.[48] Reverberatory furnaces were used first in connection with lead, then copper, and finally tin. Not until 1760 was coke used widely in the blast furnaces, although it had been employed as early as 1708-12. After 1675 there came an increased use of the Dutch loom, enabling one man to weave a dozen tapes or ribbons at once.

The Academy of Sciences was an active center which favored the multiplication of machines in France. Frequently consulted by the royal power on the utility of new inventions, it was, at the beginning of the eighteenth century, a great authority on industrial affairs. At the end of the sixteenth century the use of hydraulic motors appeared as the prerequisite for every metallurgical establishment; the question of water dominated all others.[49] The use of hydraulic power effected the transformation of the iron industry. With the establishment of mills on the

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[48]Derry, op. cit., p. 104. [49]Levainville, op. cit., p. 23.

superior courses of the rivers, miners took measures to deepen their older mines which were within reach of these forges.[50]

From the foregoing rather cursory survey of industrial movements prior to 1760, several observations seem pertinent: (1) Commercial expansion had in the early period brought a very definite consciousness of nationality and trade rivalry; nations later saw the possibility of world-wide markets. (2) The government of every country adopted a rigorous policy of interference and regulation with regard to industry. (3) Industry on almost every score showed a tremendous advance, drawing more and more labor into its employ as techniques of production and marketing improved, fostered by the power of capitalistic hands. (4) Industries such as the textile expanded largely through improvements in the domestic system and the use of capital; toward the end of the period, however, textiles and others attracted numbers of laborers to permanent workshops housing equipment too expensive for use in the home. Machines had become indispensable in many types of industrial work. (5) Agriculture and its laborers felt the effects of industrial improvement and need for raw materials. The policy of enclosure, whether for one purpose or the other, made for mobility of labor and prepared the way for later concentration in manufacturing centers. (6) Industrial development weakened the small, independent master, placed large numbers of laborers in a position dependent upon capital, and placed the determination of wages more firmly in the hands of the producers. The background for the more rapid industrial changes of the succeeding period was thus firmly built in this formative period.

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[50] Ibid., p. 26.

CHAPTER II

THE INDUSTRIAL REVOLUTION: ITS IMMEDIATE EFFECTS UPON THE WORLD OF NEW TESTAMENT CRITICISM

The review of industrial facts given in the study so far has demonstrated the concept that the so-called Industrial Revolution may be painted against a background of rather steady economic growth. Answering the call of new and growing markets, England had begun to improve her facilities for production decades before Watt began work upon his steam engine. France and Germany, though less advanced in many ways, were responding to the demand for expanding production. The years from 1700 to 1760 had been important ones for English industrial growth, for it was in this period that practically all the trades and industries which exist today had their beginnings.[1]

Economic changes had effected a radical shift in social and political power. Until the Whig Revolution of 1688, the landowning class had been practically supreme; there arose now the mercantile class as a powerful rival. The latter group entrenched itself in the national scheme by the purchase of large quantities of land, accruing to itself by that act such sanction and power as still inhered in land ownership. The commercial capitalist was fast coming into prominence as a landowner; in addition, he was able to maintain a tremendous amount of prestige as the

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[1]John Lord, Capital and Steam Power 1750-1800 (London: P. S. King and Son, 1923), p. 19.

master of the workmen whom he employed.[2] These men had begun as merchant-middlemen, who gave out work to be done by the employees in their homes; gradually, however, it was becoming the custom to employ a large number of workpeople under one roof, directly under the supervision of one great manufacturer. But until the advent of power machinery, small manufacturers and domestic labor existed side by side with these more prominent capitalists. The merchant clothier had been from the beginning a capitalist, for he had to engage workmen and become in one way or another an employer. This marked the first stage in the gradual transformation of commercial capital to industrial capital.[3]

Previous to the application of power machinery to the woolen industry, we may note three successive stages of development, although the types represented often existed side by side: (1) industry in the hands of the independent producers, (2) industry carried on by merchant manufacturers through domestic labor, (3) the industry of large workshops, which had made comparatively little progress, viewed in the light of its auspicious beginnings in the sixteenth century.[4] Industry in England in the early part of the eighteenth century was still largely on the domestic basis. A few developments constituted exceptions. The coal mines required the gathering of a number of workmen into one place, and the means for exploitation required capital investments. The same was true of iron and copper mining. Although lead-mining in Derbyshire and tin-mining in Cornwall were on a free basis,

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[2]Gibbins, op. cit., p. 143.

[3]Paul Mantoux, The Industrial Revolution in the Eighteenth Century: An Outline of the Beginnings of the Modern Factory System in England; trans. Marjorie Vernon (2d ed.; New York: Harcourt, Brace & Co., Inc., 1927), p. 62.

[4]Ibid., p. 90.

the increasing expense of equipment and operation were forcing the small master out before the capitalistic mine owner.[5] The calico printing works near London were by the nature of the processes forced to congregate workmen in one place.[6] Blast furnaces for iron, smelting houses for copper, tin, and lead, required some fixed capital and employment of a number of laborers on a wage basis. Some of the iron industries also anticipated the later factory system. In cases where non-human power had been adopted, capitalistic organization and concentrated labor were inevitable. Corn and fulling mills run by water power, the complicated machines of the silk mill at Derby, and the introduction of the swivel loom into the cotton industry were definite steps toward power machinery.[7] Apart from such examples as these, however, industry in England in the early eighteenth century was domestic. The true control of such industry had come to center in the merchant-manufacturer, who in most cases supplied the raw materials and disposed of the finished product, leaving only the actual labor in the hands of the master of the trade.

Most of the domestic labor was carried on by persons who devoted some part of their time, in large or small degree, to the pursuit of agriculture. The processes of enclosure, coupled with emphasis upon improved farming, tended to increase the holdings of individual men, notably the merchants who had bought land for sheep-raising and other commercial purposes. This process was steadily increasing the surplus population upon the land, one of the conditions which favorably prepared the ground for more rapid

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[5]Westerfield, op. cit., p. 250.

[6]Louis W. Moffit, England on the Eve of the Industrial Revolution (London: P. S. Kemp and Son, 1925), p. 193.

[7]Ibid.

industrial development.

In the middle of the eighteenth century, there was a very considerable increase in population, a fact which is rather difficult to explain. At this period, too, there was in evidence that shifting of centres of population from the South to the North of England, an important feature in the new industrial epoch.

Thus was the England out of which arose the series of rapid advances commonly called the Industrial Revolution. We have next to inquire into the nature of this advance, and to delineate, if possible, some of its main aspects and results.

For England, the term "Industrial Revolution" implies the series of changes which converted her from a predominantly agricultural country to a leading manufacturing nation. That these changes were fundamental is demonstrated by a comparison of her economic structure in 1760 with that of a century later. The rate of change and the precise nature of the changes, however, defy exact statement. Certain it is that a succession of inventions enormously increased productive capacity. But what made the need for these inventions felt? What made possible the application and further development of new machines? The answer must obviously be found in the developments preceding 1760, those changes which made England a commercial nation, searching out and exploiting new markets for her products. Although the domestic system was still most prevalent in production, it was dominated by merchant traders whose chief interests were primarily distribution and markets rather than increased efficiency in productive methods. With the rise to domination of forces which desired freedom from governmental restraint in order to exploit the growing market came new power to expand and greater demand for

products. France's failure to cultivate these widening commercial interests was one cause of her slower industrial development.[8] Additional calls upon productive forces turned attention to their possibilities for improvement. Inventions were presented to meet this need; they were adopted and developed because capitalistic enterprise was already strong, and the markets of the world presented excellent prospects for the sale of goods. It might be said that the great series of inventions were the effect of expanding markets, but as they were caught up and used to further the possibilities of expansion, they also became inalterably fixed as one of the great complexity of causes which urged on the Industrial Revolution. It would be a mistake, however, to contend that the apparent suddenness of the revolution was caused by the number of inventions coming within the space of a few decades. It took time to develop them to a point of usefulness, and even when that had been done, general adoption lagged years behind.

Although the course of the nineteenth century saw most of the French industries remodelled, it might be said that France never went through an Industrial Revolution. True there was a gradual transformation, a slow shifting of her economic centre of gravity from agriculture to industry, a slow change in the methods of industrial organization.[9] Traces of this movement in the first half of the century are hardly perceptible, in spite of the noise and controversy which accompanied it.[10] Measured by the yardstick of growth in the population of cities, France was a very poor second to England. What were the causes of this slowness of industrialization? Certainly the government was favorably

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[8]Henri See, Modern Capitalism, Its Origin and Evolution, trans. H. B. Vanderblue and G. F. Doriot (New York: Adelphi Co., 1928), p. 119.

[9]Clapham, op. cit., p. 53. [10]Ibid.

disposed; the Napoleonic regime had done all in its power to stimulate home industry in the support of the wars which it constantly waged. In spite of the efforts of the English to keep their inventions and technical knowledge to themselves, it crossed the Channel in times of war and peace. France was handicapped, first of all, by a long series of wars which drained her of resources and men, making her finally the battleground of the nations. In the third decade of the century Chaptal stated what was a much more important consideration. France had cheaper labor than England, and, in addition, her fuel was much more expensive than that of the English.[11] The coal resources of the French were thoroughly inadequate, even as they are today. Belgium, in contrast, had adequate resources, and was the one country in Europe which kept pace industrially with England.[12] In metallurgy, the story was much the same. After 1815, the French began to remodel along British lines, moving slowly behind a more rapidly developing Belgian metal industry.

The French industrial movement continued to be leisurely. Each decade from 1850 to 1910 saw roughly three per cent. of the population transferred from the rural to the urban group. French genius contributed its share of inventiveness, endurance, and organizing capacity.[13] Jacquard's loom and Heilmann's combing machine, the endurance of the peasants when set to work in the factories, and the capacity for organization first seen in French armies are witnesses to this fact. Opportunities for industrialism were limited by the course of political events in the later nineteenth century and by the lack of fuel and raw materials.

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[11]Jean Antoine Claude Chaptal de Chanteloup, De l'industrie française (Paris: A. A. Renouard, 1819), II, 28.

[12]Clapham, op. cit., p. 57. [13]Ibid., p. 232.

The industrial history of Germany in the early part of this period shows a great many parallels to that of France. Applying the criterion of urban growth, Germany showed an exceedingly low level of industrialization in 1815, and a level very little higher in 1850.[14] Down to about 1800 Germany retained a sharp division, both economic and social, between town and country; these distinctions could not be expected to melt away within one generation to yield to the establishment of a freely working industrial society. The gild systems lingered on, being partially adapted to the type of domestic manufacture which was prevalent in most of the German states.[15] Capital found its chief use in the commercial entrepreneur, who marketed the products of domestic labor, and assumed some control over the workmen whom he employed. In many cases, this commercial capitalist did not supply the raw materials nor the simple mechanical devices used. The close of the Napoleonic wars brought further possibilities for expansion along English lines, but even then there was no rapid development. Dislocations due to both war and peace, scarcity of capital, lack of assurance as to industrial freedom, and the sharp divisions of the German states acted as effectual drags on industrial progress. Germany was more fortunate than France in the matter of fuel and raw materials. Machinery had made some little headway in the field of textile manufacture. Most of the spinning mills were of very primitive type, and made very little use of steam power.

The period from 1848 to 1914 exhibits the rapid industrialization of Imperial Germany. The townward rush began in the fifties, and by 1910 sixty per cent. of the German population lived in places of two thousand or more. The rural population

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[14] Ibid., p. 82. [15] Benaerts, op. cit., p. 476.

remained almost stationary throughout; the enormous increase in numbers was absorbed by the towns. Down to the forties Germany saw little industrial growth in the sense which England experienced. Then in two generations came the railways, the abolition of medieval economic restriction, the expansion of the Zollverein, the creation of a modern financial and banking system, the great steel inventions, the achievement of national union, and the period of electricity, overseas expansion and world policy.[16] The railways formed the transportation basis for the development of coal resources which had hardly been touched before 1840. The creation of an iron industry on the English lines had been only a matter of capital and organization. Germany's industrial transformation was late, but it was thorough.

The driving force which initiated drastic mechanical changes in the means of production was an ever-widening market. The tremendous series of changes which were first and most clearly exemplified in England would never have been possible without the development of markets to absorb the fruits of the industrial process. The market of the closed community is relatively fixed, its needs can be ascertained and met. But when it becomes possible to ship English cloth to all parts of the world, the stimulus for cloth-making is tremendously augmented. The market was continually growing. A graph of English exports in the eighteenth century shows slight increase, though with fluctuations, until 1780; after that time the export line skyrockets to the top of the graph, meeting with increased production the tremendous demands of the outside market.[17] Matthew Boulton of Soho was willing to finance James Watt in his development of the steam engine because

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[16] Clapham, op. cit., pp. 279 f..

[17] Mantoux, op. cit., p. 104.

he, as a shrewd trader, was versed in the needs and possibilities of the market.[18] Back of creative mechanical genius was the gamble that surpluses could be exchanged to advantage. A devout economist of this period, such as John Bright, could look forward to the abolition of warfare and the development of free trade, because the best interests of his community took in all warring nations and required production rather than destruction.[19] As Adam Smith recognized,[20] the extent of division of labor is limited by the range of the market. Intricate development within the individual industries followed the recognition of the widened market.

The part which the inventors played in the meeting of this expanding market can hardly be overstressed. The introduction of the factory system was dependent upon the use of motive power other than that of men or animals. Machines were being constantly improved; new methods of manufacture greeted the various industries almost every decade, but radical changes which bridged the gap between "manufacture" and the factory were not forthcoming until the advent of power machinery. Hargreaves' spinning jenny, Arkwright's water frame, Crompton's "mule," and Cartwright's power loom forecast the doom of the hand-spinner and the hand-weaver, but their ultimate power of revolutionizing the textile industries was dependent upon the application of steam power. The use of water power limited industries to certain localities. Even in the more favorable situations operation often ceased

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[18] Ibid., pp. 106 f.

[19] George H. Mead, Movements of Thought in the Nineteenth Century, ed. Merritt H. Moore (Chicago: University of Chicago Press, 1936), p. 192.

[20] A. Smith, An Inquiry into the Nature and Causes of the Wealth of Nations (London: W. Straham and T. Codell, 1776), I, chap. iii.

for periods of time because of insufficient water or poor connections with the supply of raw material and facilities for disposition of the finished product. The creation of artificial reservoirs called for the use of a pump, and it was thus that the steam engine came first to be used.[21]

The long list of those who contributed to the final success of the steam engine is an interesting study in itself. The Marquis of Worcester, Dionysius Papin, Thomas Savery, Newcomen and Calley, all perceived the need for a steam pump or engine in mining and developed mechanisms directed toward the fulfilment of that need.[22] But it was Watt's great discovery, the theory of separate condensation, which made the steam engine a useful and economical source of power.[23] So thoroughly was his work done that for a hundred years after his invention no drastic alterations were made in the type of steam engines in common use.[24] The birth of this revolutionary idea, however, was merely the beginning of arduous work ahead. Watt had no money for experimentation and no capital to manufacture engines; to Roebuck and Boulton he had to turn for support in this direction. Although Watt's engine was patented in 1769, the end of the eighteenth century witnessed not very extensive use of steam power. "The total number of engines employed in Great Britain and Ireland, in the year 1800, was 321, representing a total horse-power of 5,210."[25] A great portion of these engines interestingly enough, were employed in comparatively new industries. The newest industry in the country, the cotton trade, used eighty-four engines as compared with the nine engines of the much older wool trade, the

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[21] Mantoux, op. cit., p. 319. [22] Lord, op. cit., pp. 34-39.

[23] Ibid., p. 75. [24] Ibid.

[25] Ibid., p. 176.

latter just developing out of the domestic system. In other industries such as mines, water-works, canals, and iron-works the steam engine had found a large place by the year 1800.

It was in the mining and metallurgical industries that the use of steam power first spread most extensively. In fact, early experiments in steam power were spurred on by the desperate need of mines for efficient pumping devices. Steam power was later used not only to clear the mines of water, but also in sinking shafts, where formerly entrance could be made only by tunnelling in the side of a hill.[26] It began to be used in bringing up coal from the pit, and in other necessary operations. The result of this application of steam power was soon seen in the development of the great English coalfields and the development of towns such as Newcastle, Sheffield, and Birmingham, whose industries depend so greatly upon a large supply of coal.

With the great output of coal came a revival of the iron industry, which had sunk to insignificant proportions during the first half of the eighteenth century. Watt's invention of the rotary motion in the steam engine, patented in 1781, converted it into a source of motive power, the uses of which could be indefinitely varied. Previous to this it had only been an improved "fire-engine," capable of draining mines and pumping water. Immediately after 1781, all the great ironmasters in England and Scotland ordered engines for the operation of bellows, rolling mills, and hammers.[27] In 1740 England produced only some 18,000 tons of iron annually and had to import at least 20,000 tons; by 1788 she produced as much as 68,000 tons, and the production went

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[26]Gibbins, op. cit., p. 160 f..

[27]From the correspondence of Watt and Boulton with the various ironmasters, cited by Mantoux, op. cit., p. 340.

on steadily increasing in the nineteenth century.[28] The wood supply of England was nearly exhausted by the early eighteenth century, and smelting with coal had made an increased blast necessary. Since the iron-works were usually situated on coal and iron seams, coal-driven steam engines furnished the most obvious power for the operation of the bellows. Thus the reason for the rapid sale of engines in the mining and metallurgical industries is most evident.

The first of the inventions by which the textile industries were transformed, and one which must be considered the origin of all others, was a simple improvement of the old weaving loom: the invention of the fly shuttle by John Kay in 1733.[29] To the field of experimentation the cotton industry was especially well adapted; it afforded favorable conditions with regard to the problem of mechanical spinning. The origin of the spinning machine is still wrapped in some obscurity, for two men, John Wyatt and Lewis Paul, had a hand in it. Hargreaves' spinning jenny and Arkwright's water frame were produced within a year or two of one another, their patents being taken out in 1769 and 1770 respectively. Hargreaves' invention, though simpler, marked the transition between manual work and machine industry, between the domestic system and the factory system.[30] Arkwright made wide use of the invention he had patented, setting up numerous factories using water power, and later at Nottingham, bringing in the steam engine as power for his mill. When he died in 1792 he left a capital of half a million pounds, being the first to build the inventions of others into an industrial system.[31] It was Arkwright who really created the modern factory and its system.

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[28] Gibbins, op. cit., p. 161. [29] Mantoux, op. cit., p. 211.
[30] Ibid., p. 221. [31] Ibid., p. 238.

At the end of the eighteenth century all the factories in Lancashire and Derbyshire were built in imitation of his establishments.

With these inventions to aid the spinner, the weaver now lagged behind. It was Crompton's "mule" and Cartwright's "power loom" which finally transformed the textile industry. The mule became the best spinning machine, and, in addition, its consequences were felt in weaving as well. Cartwright's loom of 1785 was clumsy and impractical, but successive improvements made it practical for operation by steam power in 1789. With Cartwright's invention all the essentials for factory production of textiles were there, and in that particular branch of production the triumph of machine industry was an accomplished fact.[32] The inventions changed not merely the power but the character of the industry. Before the Industrial Revolution spinning and weaving were both cottage industries, spinning being done largely by women and children, while weaving was the work of the men. The advent of power machinery reversed the process, sending men to tend the spinning machines and women to the weaving machines; both in spinning and in weaving the adults depended upon the labor of large numbers of children.[33]

This revolution in the methods of industry caused a tremendous increase in capacity of production; in 1764 England imported less than 4,000,000 pounds of cotton wool, in 1833 more than 300,000,000.[34] To supply the raw material another invention, the cotton gin of Eli Whitney, had been pressed into service.

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[32] Ibid., p. 250.

[33] J. L. and B. Hammond, The Rise of Modern Industry (New York: Harcourt, Brace and Co., 1926), p. 183.

[34] Ibid.

Whitney's saw gin, invented in 1793, brought the United States and its short staple cotton into the position of leading producer of cotton wool.

But there was a further growth of the factory system which took place independent of machinery, and owed its origin to the expansion of trade through advance in the means of communication.[35] The last decades of the eighteenth century and the early years of the nineteenth saw the rapid development of a canal system, the great improvement of the roads, and the opening of the first railroad. Improved means of communication were added stimuli to commerce and production.

The introduction of the factory system forms one of the patent facts of the Industrial Revolution. The factory system brought about an even more rapid concentration of population in industrial centers than had been the case in preceding decades. In addition, population was increasing by leaps and bounds. A decennial increase of three per cent. before 1751 was large; between 1751 and 1761 the increase was six per cent.; between 1811 and 1821 it was 18 per cent.[36] There was a tremendous shift from the agricultural sections to the industrial northwest, so that in spite of increasing general population the agricultural sections actually lost in numbers in the period 1831-1841.[37] This loss of population by agricultural sections found as its cause not only industrial development but improved methods of farming and types of land-usage which required fewer tenants. The great migration to the northern sections, already begun before 1760, was now accelerated and completed. The centers of the new factory system

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[35] Toynbee, op. cit., p. 91.

[36] Ibid., pp. 87, f. [37] Ibid., p. 88.

were in the north, and thither flocked the workers who had formerly been distributed over England in a much more extensive manner. The population followed the looms to the factory, and the great industrial centers saw the building of the factory city. This removed the individual from the soil, and broke the hold of the feudal system, not only economically but socially as well. The common man became more his own master, but the factory city and the intense concentration of population brought new problems in their wake.

The concept of a wider market brought with it the possibility of production on a large scale, necessitating the establishment of the factory and a division of labor. This in turn caused a simplification of tasks assigned to individuals, a simplification which challenged the invention of machines and made the work of individual men still more routinized. The stimulus to the production of machinery comes, then, with the demand for production on a large scale, from the breaking up of the process into simple parts which a machine can do rapidly and better than a man.[38] The productive efficiency of the factory and its power machinery thoroughly outmoded the domestic industry and made it increasingly less profitable. The surplus population went into factory work with few misgivings, but those who had depended upon cottage industry changed over with great reluctance. Although many of the latter remained for a long time outside the new system of industry, its all-pervading effects were almost immediately felt. That influence was at first an object of fear. Public distrust of the machine brought uprisings against it, culminating oftentimes in the destruction of machines and factories.[39]

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[38] Mead, op. cit., pp. 190 f..

[39] See Mantoux, op. cit., pp. 409 f..

Intermixed with their grievances against machinery was their hatred of the factory, with its discipline and its hard hours. Many of the men were preceded into factory work by their wives and children, who found employment there more profitable than assistance in domestic industry.[40] In addition, there were many tasks of a mechanical nature which required the labor of men. The labor wants of the first factories were supplied in part by the importation of pauper children from the parish workhouses of the great cities. The children, of course, had no family care, were mistreated at the factories, and at night were herded into the apprentice houses. While the cottage weavers were prosperous they took pride in keeping their children away from these conditions of the factory, but as their prosperity faded and as mills were built in the centers of population they bowed to the inevitable.[41]

In the factories, even down to 1833, the working day was fourteen hours, with intervals for meals given by the better mills.[42] When in busy seasons the factory operated the whole night the children were thereby enabled to make a little extra money. The effect upon home life can easily be imagined. The severe results in disease and deformity forced the problem to the attention of the lawmakers.

Reform came in the Act of 1833, sponsored by the Earl of Shaftesbury. Previous attempts to regulate factory conditions had been blandly disregarded, because the government failed to appoint inspectors. With their appointment to help in the enforcement of this Act, some of the more flagrant abuses

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[40] C. R. Fay, Great Britain from Adam Smith to the Present Day: An Economic and Social Survey (New York, 1928), p. 350.

[41] Ibid., p. 353. [42] Ibid.

disappeared. The Act forbade the employment of children under nine at any time and of persons under eighteen at night, and prescribed for those aged nine to thirteen and fourteen to eighteen a maximum of nine and twelve hours respectively.[43] Further reform followed in 1847, 1850, and 1853, all these laws relating to the textile industries. Reforms in other industries did not come until later years. The laborer had escaped the domination of the feudal organization, but he needed the regulating hand of government to protect him from exploitation by the capitalist.

The cursory survey of industry given in this and the preceding chapter bears witness to the increasing importance of capital in industrial enterprise. Capital of a commercial nature was needed by the merchant clothier in the domestic system; still more capital was required of the master manufacturer who brought together under one roof a larger group of laborers using available mechanical devices, but vastly more capital was needed by the factory owner who must invest heavily in machinery, fuel, materials, and labor in advance of the sale of his product. As more capital was required and closer organization of labor was demanded so also the power of the capitalist grew in proportion. These men who thus obtained control of labor also used their capital as an entering wedge to force themselves into the positions of prominence in politics and social life. Many of them invested heavily in land, not only to develop it for the supply of raw materials, but to acquire for themselves the social prestige which accrued to the landed classes.

The great manufacturers were not necessarily the men responsible for mechanical progress. Arkwright stands almost alone

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[43] Ibid., p. 354.

among the inventors for his ability to profit through manufacture. Watt's fair financial status was secured almost entirely through the efforts of his business partners, Matthew Boulton in particular. The factory system attracted men from all over the country, many who had made some capital in other enterprises. Investments were often made when the would-be industrialist knew nothing of the management of the rapidly changing factory equipment or of judging raw materials which must be bought. Some of these investments ended in success, but most of them were doomed to failure. The outstandingly successful men were those trained in the management of the trade, men who could adapt new machinery and the factory method to the commercial system of the day.[44] Many of these men took pride in the improvement of the articles which they manufactured, and of the industry which they represented.[45] Their power and influence in the affairs of the day is not to be doubted.

With the rise to power of the industrialist and the shifting population came the loss of prestige by the nobility and landowners. Feudal rights and privileges inhered in the attachment of the worker to the soil; once that relationship was broken the worker became more his own master. At least he could choose the type of work which he would do, because most work in the factories was entirely of unskilled nature. Thus the landowner or feudal lord, who was in many instances also an officer of the peace, lost control of the majority of the population. The great bulk of the workers were under the much less rigorous supervision of town authorities in matters of law, while their business relations were matters of temporary contract. The wealthy

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[44]Mantoux, op. cit., pp. 376 f. [45]Ibid., pp. 387 f.

industrialist, who had hundreds of men under his control and in many cases owned extensive properties, became the symbol of power which for the masses displaced the landowning noble. The Industrial Revolution definitely brought to an end any belief which the common man may have hitherto held that the age-old class arrangement was a permanent thing. Authority had visibly shifted, and by that shift the suggestion arose that still further adjustments were possible.

This challenge of authority as centered in the upper classes was of long growth. The feudal system had seemed outworn for centuries in the face of the developing economic life, and Liberals in the seventeenth and eighteenth centuries had cried out against its abuses. It was no longer a regulatory system but the entrenchment of a class. The individualism of Locke, Smith, and Bentham, like that of Turgot in France, had decried authority exercised in the interests of the few. Advocates of the system sought its justification not in the idea of duty or function, but on the ground of divine right.[46] The Liberals did not quarrel merely with the abuses of the feudal society; they combated its underlying principles. They set up the idea of natural rights, among them the right to acquire and use property. Coincidental with the urging of these rights industrial progress culminating in the factory system was cutting away the economic underpinning of feudalism. With the door thus thrown open to enterprise and thrift, the authoritative basis of the old order collapsed. With that collapse the whole question of authority was thrown upon debatable ground.

There was evident in the spirit of the times a growing revolt against restraints of any kind. The economic view which saw

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[46]Hammond, op. cit., p. 215.

in the widened market the hope of extending industry left no room in the picture for the older "mercantile" theory, which was thoroughly nationalistic in attempting to accrue profits at the expense of all neighbors.[47] The older theory had energetically pushed governmental regulation and restraint, to the disaster of new industries and international trading. England in 1760 was still to a large extent under the mediaeval system of minute industrial regulations.[48] The duty of the state included watchful care in this realm as in other areas of life. When Adam Smith wrote his Inquiry into the Nature and Causes of the Wealth of Nations (1776), this theory of the state still largely affected English industry. There was comparative freedom of internal trade, even though there existed a network of restrictions on the mobility of labor and capital.[49] The law of apprenticeship[50] imposed regulations which hindered trade activity, and the control exercised by corporations was abusive. The regulation of wages by Justices of the Peace was another relic of mediaevalism.

The principle of regulation was exemplified much more thoroughly in external than in internal trade. Corporate trading under the great chartered companies had outlived its day of usefulness, serving largely as a restriction upon individual enterprise. Nations anxious to profit at another's expense were particularly careful to hold gold and silver within the realm; the export of either was therefore forbidden. The inhabitants of England were encouraged to develop export trade and narrow imports.

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[47] Josef Kulischer, Allgemeine Wirtschaftsgeschichte des Mittelalters und der Neuzeit (München: R. Oldenbourg, 1929), II, 442 f.

[48] Toynbee, op. cit., p. 72.

[49] Ibid., p. 73. [50] Ibid.

Wars of tariff ensued, with the result of commercial deadlock. Although the law forbidding the export of gold or silver was repealed, multifold hindrances to free commerce still existed when Adam Smith composed his famous work. Under the protectionist policy, the struggle of rival interests within the country brought serious consequences.

The Wealth of Nations was written to meet the needs of its time in the Liberal spirit of freedom from restraint. It cites data from the industrial facts of the time; its reasoning seems often tedious and confused. But it was this very practical feature which brought it to the attention of leaders of the time. Smith launches attack against the hindrances to free exchange of commodities; he sees the nation's real wealth in its power to produce a surplus of products which it can exchange with other nations in return for products which England cannot manufacture or raise with efficiency. The value lies in the exchange which is beneficial to both parties. All wealth ultimately goes back to the ground and its products, according to Smith, but the potentialities of this wealth cannot be realized under a system of regulation and nationalism. Behind the political economy of Adam Smith lies his concept of the market.[51] His powerful principle was the automatic regulation of industry by reference to market price.[52] Man's self-love would act, as God's providence, individual liberty was of supreme value. These principles were part of the great industrial revolution; they formed part of the basis for its expansion, and they were thoroughly in accord with the growing spirit of the age generally.

The many factors which, taken together, we call the Industrial Revolution brought in their wake noticeable changes in

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[51]Mead, op. cit., p. 189. [52]Fay, op. cit., p. 14.

attitude and method. One of the most outstanding of these was the mechanization of life, the concentration of large groups with the machine and its work as the center of activity, which activity in turn affected the attitudes, opinions, and work of the social group as a whole.

In the industrial changes are to be found the real beginnings of the social and political movements of the time. Men could not be brought together in such numbers to work and live together under similar conditions without becoming conscious of their similarities, and of the identity and common cause of their ills.[53] Having been more or less forced into industrial unity they began to assert themselves as unified politically. They were definitely arrayed with industrial capitalism in opposition to the landed aristocracy.

In this period of industrialization, the methods of the natural sciences were perfected as was only possible in an age of organization. The effects of the great inventions and discoveries began to be felt; the range of knowledge increased continually. Many of those things which, up to that time, had been regarded as special divine revelation were discovered to be the product of natural human development and subject to definite laws. The political Revolution, with its emphasis on the rights of man, was only an imitation of the spiritual one, which put the individual on his own feet and overthrew all authorities which had forced upon him an alien will.[54] The church, with its authoritative dicta, felt the inevitable pressure of this surge toward

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[53] Heinrich Weinel and Alban G. Widgery, Jesus in the Nineteenth Century and After (Edinburgh: T. and T. Clark, 1914), p. 4.

[54] Ibid., p. 35.

investigation along scientific lines.

Throughout the whole of the nineteenth century Europe was essentially scientific in its knowledge achievements.[55] Philosophy in that period was characterized by the absence of dogmatism. Earlier philosophies had been guided along intellectual lines by the dogma of the church. But the balance of power had shifted; scientific method had come to the forefront of thinking through its domination of industry and its vital connection with the lives of such a multitude. It was in this area that science had its most powerful contacts with the populace. Industrial progress was dependent upon the application of science; thousands of people were in turn dependent upon industry and its advances. Science advanced through the principle that by obeying nature one might control it by discovering uniform laws.[56] With the gradual discovery of these laws and the willingness to obey them in pursuing one's own ends came a distinct diminution of dependence upon an arbitrary creator or governor. The theological postulates seemed unnecessary for an explanation of the natural order, a position which gained immense strength with each mechanical advance in control over nature. Cause and effect were traceable on the basis of the uniform laws of nature, efficient cause displaced final cause.

The authoritatian view found itself beset on every side. Mechanical and industrial progress moved under laws which could be explained and understood. Furthermore their outworking and efficiency were demonstrable, they were most evident to those who found in industry their means of living. Science stated certain fixed conditions under which certain phenomena could appear. These conditions were subject to check in relation to all other

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[55]Mead, op. cit., pp. 246, f. [56]Ibid., p. 249.

phenomena. Thus the firm entrenchment of the scientific method led to the analysis of biblical narratives from the point of view of observable scientific formulae. From no quarter did the scientific method receive the tremendous impetus given it by the mechanical sciences, and the mechanical sciences found their chief expression and impetus in the Industrial Revolution.

The mechanistic interpretation seemed to imply that the whole world was fixed and determined. Yet, paradoxically enough, it gave man greater control over his environment, greater freedom of action, and allowed him to set up social objectives. Control arose through the knowledge of physical laws which one learned through obedience to them. Biological laws could be derived through minute observation of the development of plant and animal forms. Knowledge in the mechanical and biological spheres came to be power, control through manipulation of law. This ability to look at the world in terms of congeries of physical particles has enabled men to determine their environment.[57] Nature became largely predictable, and the object of ordered study. Nowhere was the proof of the dicta of science concerning nature more in evidence than in industry, where scientific principles were embodied in machines and techniques which daily touched the lives of thousands. In that realm control was possible with the knowledge and use of natural law. The Industrial Revolution made science observable.

In high contrast were the authoritarian tenets of religion and the biblical records. Predictability was hardly possible in realms where control was exercised by arbitrary authority. Contrasts between New Testament records and scientific possibility were evident to the critical reader. Observation of the natural

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[57] Ibid., p. 261

order of events brought into question the accounts of supernatural and whimsical intervention, particularly in the light of laws of cause and effect. Rationalists had already examined the documents in the light of their own particular theories, and had satisfied themselves as to the truth or religious value of various narratives; it remained for scientific principles of relation to all other phenomena to be applied in as objective a manner as possible. A clear understanding of the operation of natural law brought questions concerning the old dogma that a celestial being came down from heaven, was born of a virgin, walked on the sea and fed thousands of people with five loaves, rose with his body from a grave and ascended into heaven upon a cloud. A renewed study of history brought clearly the question: "Who was Jesus of Nazareth?" In harmony with these doubts and questions came forth studies of New Testament documents based on the common scientific principles of the day.

Interest in these questions grew with knowledge of science by more and more people. To industry must go a great share of the credit for moving scientific knowledge within the range of masses of people. Industry, particularly in its revolutionized form, was the application of science and its principles to the means of production. Thousands who touched science and saw its operations in industry could never contact it so directly elsewhere. Those men who worked under the laws of science daily could not fail to see a contrast so obvious as that presented by arbitrary authority pictured in scripture records. The spread of the Industrial Revolution marked the penetration of scientific concepts into newer territories.

The application of science through the Industrial Revolution brought the inductive method of analysis and study into dominance. Experimentation was the basis of research and advance in

science, experimentation upon individual devices or phenomena which were subject to control. Advances came not by new derivations from authoritative general concepts but by data recorded from individual experiments, data which could later be used in the formulation of laws under which phenomena appeared.

This was clearly demonstrated in the advances of the mechanical world. Watt's steam engine came to a stage of usefulness only after he had studied it from every angle, comparing the results obtained in various tests, and noting the individual weaknesses. In 1759 he had first turned his attention to steam engines, with the idea of turning them to uses other than pumping. He first tried to drive his engine by the pressure of steam itself, but eighteenth century mechanical technique was not good enough either to produce a steady supply of high-pressure steam or control it if produced.[58] After reading a few standard works, he examined in detail a model of the Newcomen engine, then in the possession of the University of Glasgow. The model would not run continuously, a fact which led Watt to examine it more from the point of view of operation. He determined on the basis of these examinations that the Newcomen type was subject to a waste of energy and a loss of power, arising from the very principle on which the machine worked. To determine what that waste amounted to he was led into a series of elaborate scientific experiments on the nature of heat and the properties of steam.[59] Thus began the long series of experiments which brought to Watt the honor of putting the steam engine on a useful plane. His career is an illustration of scientific inductive

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[58]T. H. Marshall, James Watt (Boston: Small, Maynard and Co., 1925), pp. 66 f..

[59]Ibid., p. 68.

method in the improvement of mechanics.

This method of approach constitutes the vast difference between a research science and any dogmatic statement of the world. He who attempts to restrict the field of operation and problem-seeking defeats the purpose and method of science before he begins. The scientist will insist upon setting up postulates which will enable him to solve his problems. Science is to be tested by the success of its postulates, measured in the light of experience, observation, and any individual cases which may be studied. When individual phenomena arise which cannot be explained in the light of the postulate, then the postulate must be discarded or modified to include all available facts. Here then is the irreconcilable conflict between dogmatic theory and scientific method: dogmatic theory insists on interpretation of individual facts in the light of an authoritative pronouncement; scientific method modifies and changes its postulates to conform to the findings of individual tests. In the former case, the observable facts must be made to fit the dogma; in the latter, the postulate must be conformed to the observable facts. In no area was this method of science made so observably dominant as in the mechanical area, and industry became the practical application of mechanics.

What this spread of scientific method would mean for New Testament criticism is obvious. The dogmas of infallibility and supernatural revelation would be laid aside; scientific method would involve an approach to the materials in the light of their relation to contemporary historical data, to the items of environment, to the observable postulates of natural and biological sciences, and to each other. The nature of the document would not be a presupposition but a postulate set up in accordance with

the findings on individual items. This scientific postulate would be by no means final, it would be modified in the light of new data. The method of induction sought to lay bare the actual foundations of life, the individual facts upon which any generalization or conclusion must rest.

Not only did the actual mechanical advances of the Industrial Revolution hinge upon the inductive method, but also the problems engendered by new labor conditions could approach partial solution only in this way. Each of the Factory Acts, aimed at the relief of exploited labor, found its support among men who had been impressed by observation of conditions prevailing in the individual factories. The Earl of Shaftesbury, one of the leading agitators for the relief of labor, speaks of his observations at specific factories.[60] Thus did induction serve its turn in attempted remedies for social evils, for each law in itself became one in a succession of experimental methods.

The Industrial Revolution affected science, too, in the development of concepts. When the manufacturer turned to the extensive application of machinery, he found that he needed some concept which would enable him to discover the comparative efficiency of different machines, various forms of power, and the like.[61] There was need for a general concept of the unit of work. In answer to this need the scientists developed the idea of energy, a bookkeeping conception of the physical world.[62] This is an important instance of the reciprocal activity of producer and scientist, where the problems of the manufacturer stimulate research on the part of the scientist whose solutions are then used in the

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[60] Cited by Gibbins, op. cit., p. 175.

[61] Mead, op. cit., p. xxi.

[62] Ibid.

work of the producer.

The idea of energy is a bookkeeping conception in that it takes electricity and light, coal, expansive steam, and the revolving dynamo, and sets up a unit by which all can be put into the same class and measured.[63] It arose in answer to the demand for a theory of the steam engine and the work it could do in comparison with other sources of power.[64] What was desired was a statement in terms of labor of all that was being done, a measurement of the machine in terms of work accomplished.

The formulation of this idea of energy was part of the great work of science in reducing natural phenomena to basic uniformities. Through this conception each event is determined by its relation to others. With increasing precision science has represented the world as a whole in which each part is definitely related to every other part in unvarying laws of interaction. It may thus be posited that scientific criticism of the New Testament was impossible before the relation of its contents to other natural events or phenomena could be determined. Before that time there would be no common ground upon which to assess its merits or determine its rough classifications.

The course of the Industrial Revolution brought in its wake increased problems for labor. The middle of the eighteenth century had seen fair conditions of labor, as a result of the new agriculture and the general growth of foreign trade. In the following years the total wealth of England vastly increased, but little of that wealth came into the hands of the laborers. The great landlords, the new capitalists, and the war treasury received most of the profits. Labor was thoroughly under

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[63] Ibid., p. 244.

the control of capital. Wages were low and prices were increasing. The depth of poverty was reached about the beginning of the reign of Queen Victoria, after which the effects of humanitarian measures began to be felt.

These years of darkness and despair which followed the introduction of power machinery brought a revived insistence upon the rights of man and a determination to secure them, in so far as it was possible. In addition, however, there followed a renewed search for a redemptive force in Christianity. Men became more seriously interested in a re-examination of Christianity and its scriptures, in an attempt to find the actual Jesus and the true Paul. The nineteenth century found renewed interest among scholars, urged on by popular concern, in depicting the historical Jesus.

Dogma ceased to be a sufficient answer for all questions. The scientific spirit had spread so widely that men were interested in the facts behind the dogmatic statements, the justification for various beliefs. Rationalism had attempted to remove or explain as natural every supernatural event in the New Testament; the scientific spirit sought to find the historical basis for the writings themselves.

Throughout all this there was growing respect for man and his capacities. Scientific achievement and control had brought confidence in his ability to change the environment; new possibilities were sighted. These possibilities were embodied in the passionate Liberal ideal of reform, and the lives of Jesus written by this school depicted him as a preacher of this type of movement.

CHAPTER III

CONDITIONING FACTORS IN THE ENVIRONMENT OF NEW TESTAMENT CRITICISM

In the foregoing pages, I endeavored to trace the slow growth of the economic factors which produced that series of immense changes men have agreed to call the Industrial Revolution. It was pointed out that the Industrial Revolution was not to be considered a comet-like phenomenon which appeared suddenly, but should be viewed as the natural fruition of economic tendencies which had long been in the process of growth. These changes in the economic situation were a part of and were reflected in the general cultural atmosphere. I attempted to sketch some of the effects which this long industrial process, culminating in the Industrial Revolution, had upon the general intellectual attitudes of the time, particularly those attitudes which would be reflected in ecclesiastical and biblical criticism. It remains now to note how this influence, as well as other powerful cultural influences, formed an environmental background out of which scientific criticism of the New Testament could arise. To put the matter in the form of a question, what were some of the conditioning factors in the environment of the scientific critic of the biblical records?

It is first to be emphasized that the Industrial Revolution did not end when the first few decades of the nineteenth century had spent themselves. Casual observers of the present day are wont to view the early history of machinery in terms of twentieth century modifications. The world did not change

magically when James Watt stood before his first completed steam engine. Many additional improvements had to be made before it could be used economically, and even then it permeated the manufacturing world with a tardiness which is astonishing. Its first application to transportation by water came in 1807, and Stephenson's locomotive found no practical use until 1825, fifty-six years after Watt projected his steam engine. Because of its wide application after this first era of inventions, steam and the steam engine became the commonplace symbol of the nineteenth century. Before the century had closed, however, electricity had seriously challenged the supremacy of steam and its uses.

As previous pages have indicated, the progress of the Industrial Revolution varied from country to country, depending upon local conditions and resources. It was heavily retarded in France, for not until the days of Louis Philip and Napoleon III was the country definitely won to the movement. Under these rulers she made great strides, concentrating her efforts upon certain specialized lines such as silks, velvets, and the highly diversified articles of female apparel. Earlier growth was not stultified by legislative or administrative action, for governmental policies were most favorable. The Revolution removed the antiquated gild system and other hindrances to free enterprise. Both the revolutionary and the Napoleonic governments did their utmost to help industry, without fettering it. Museums of arts and crafts, industrial exhibitions, and schools of civil engineering and mining were sponsored long before England had anything of the kind. The continental system of Napoleon encouraged scientific exploration of industry. Chemists who developed new methods for the manufacture of soda and explored the possibilities of the sugar beet industry were encouraged by the government.

The munitions industry welcomed scientific training. Under the stimulus of the government's need, bleaching with chlorine was popularized and a coffee substitute invented. Each of the French governments attempted to utilize English mechanical knowledge, and in spite of an almost unbroken series of wars, advances were made in this direction. One of Boulton and Watt's steam engines arrived at Le Creuzot in 1782; the spinning jenny must have crossed the Channel about the same time, and the flying shuttle was taken up in France about 1800. Napoleon's minister for industries was able to boast that he had sold over three hundred wool carding and spinning machines in two years. Jacquard's loom was made under the encouragement of the government at the Conservatoire des Arts et Metiers. But France was fighting against insuperable odds. Unsettled political conditions created unreal economic situations, and the exhaustion of war took its mighty toll. In addition, as has been noted previously, her lack of fuel and resources formed a limiting factor which she could not overcome. France's economic history of the nineteenth century was one of gradual change, of much less perceptible character than was the case with England.

The rapid industrial advance of Germany came in the period succeeding 1860, when economic liberalism triumphed and the unification of the German states made advance systematic. After 1871 Germany came from behind with a mighty industrial effort, and by the close of the century was in a position to challenge England, the recognized industrial leader. That this sudden spurt was not without previous industrial accomplishment, however, is evident from the mechanical progress of the earlier decades. About 1820 the first steamboat appeared on the Rhine,[1] and at the same time

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[1] Benaerts, op. cit., p. 374.

steam power appeared in industry. In 1822 an engine was installed in one of the large spinning mills of Chemnitz, and another was used in the coal mine of Plauenscher Grund.[2] By 1826 the mines of Prussia alone employed fifty-eight steam engines, by 1837 three hundred and twenty-eight were in service, and the year 1855 saw 1,191 engines in mining alone.[3] Other industries developed steam power more slowly. Saxony improved in this respect less rapidly than did Prussia, while Würtemburg and the region around Ulm were still more backward. The wars and economic policies of the era of Napoleon were felt by German industry long after Waterloo. Before the nineteenth century, Germany had made very little use of her extensive coal resources. By 1837, the average copper, lead, or silver mine employed only thirty or forty men, but they bequeathed to the country a store of technical knowledge and experience. The three great coal-fields of Germany came to be worked in 1815 and 1840. In the manufacture and use of machinery Prussia and the Rhine provinces were in the lead. Cotton and silk industries were concentrated in the Rhenish provinces. The general spread of industrial progress was hampered by the unavailability of resources before the railway age and the disunity of the German states. The full impact of industrial change could not be felt until these obstacles were removed. Once these problems had been solved the principles of the Industrial Revolution, long known and supported by the German people, were allowed to issue in convincing activity.

The course of England's masterful industrial leadership has already been traced. With abundant natural resources and favorable political conditions her industries could respond to the call of the widening world markets. Thus did the actual

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[2] Ibid. [3] Ibid., p. 375.

outworking of the principles of the Industrial Revolution vary from country to country. We turn now to the examination of kindred factors in the environment.

Primarily an economic and a social movement, the Industrial Revolution brought in its wake a political upheaval, for it bolstered the already surging power of the middle classes. It was the middle classes which had dealt the death blow to the feudal system and had supported and maintained the centralization of power. It was this same powerful group who, first in England and then in France and elsewhere, insisted upon a direct share in the government through the constitutional system.[4] In England, the middle classes formed the strong center of the Whig (constitutional) party; like-minded parties arose in the nineteenth century on continental soil to demand a share in government.[5] Three major points dominated the program of these liberal parties: (1) wishing to silence the annoying interference of the clergy, they promoted toleration, (2) desiring to destroy the political domination of the king, they supported the constitutional system, and (3) anxious to remove the barriers of a narrow provincialism, they maintained the broader cause of nationalism.

This entire program of liberalism found its basic drive in the middle class will to power, and any hope for its fulfilment was founded on the common knowledge that the age of capitalism and the machine was the age of the middle classes. For it was they who built the machines and furnished the capital, who supplied engineers, technicians, and financial advisers. To forward the progress of their movement they organized educational systems and

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[4]Ferdinand Schevill, A History of Europe from the Reformation to Our Own Day (New York: Harcourt, Brace and Co., 1925), p. 518.

[5]Ibid., p. 519.

employed lawyers, physicians, teachers, and other professional servants. Their program of liberal activities produced political unheavals in the course of the nineteenth century, but victory was assured by their control of the reins of economic power and their superior organization.

This political philosophy of the dominant group was supported by an economic and moral philosophy directed toward the same ends. The bourgeois economic philosophy found its early expression in the physiocrats of France with their laissez faire and in Adam Smith's ardent drive for free trade. Toward 1750 the French group had begun the application of the scientific method to the economic field, concluding that there existed a body of economic laws with something of the sweep and dignity of the natural laws of the astronomers and that it was suicidal to attempt to inferfere with their operation.[6] They indicted the governmental policy of regulation and interference for hindering the true course of enterprise and thus bringing on the curse of poverty. Their arguments were developed and clarified by the Scotsman Adam Smith, whose Wealth of Nations contends not only for removal of all trade restrictions but for the greatest possible freedom of human labor, the basic factor in production. A society of liberated men and women would require no regulative force other than their own enlightened self-interest. These arguments placed Adam Smith squarely in the line of middle class thought, and revealed the key to their evolution. Once the governments could be forced to abandon the mercantilist policy of interference, the bourgeoisie could exercise to the full its initiative in developing the world's natural resources.

Lending full assistance to the program of the liberals

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[6] Ibid., p. 395.

was their ethical philosophy of freedom and individualism. Theirs was the cause of freedom; they believed it their privilege to further the course of events which seemed to deliver men from their bondage to the other of the middle ages. The free man should thrust off the fetters which bound him to feudal law and dead tradition, to the Church, to the absolute state, and to the mercantilist system.[7] Human beings were from thenceforth to assert their manhood, to stand on their own feet, to shape their own destiny, and to realize the dignity inherent in them as the crown and glory of creation. Life had been essentially a struggle in which the unfit had perished and the best had survived. The misery of existence was forgotten in the firm conviction of the uninterrupted progress of man. Involved in this philosophy of the middle classes were all the elements which brought a new respect for man in relation to his environment, a respect which would make him a fit judge of affairs ecclesiastical and biblical. Reasonable scientific procedure could now be sustained even in the investigation of dogma and scriptures which the Church had always proclaimed infallible and therefore beyond the ken of ordinary men.

Yet the middle classes and their philosophy were not left in quiet possession of the field. The challenge to their supremacy issued from a group which they had been influential in creating, the industrial workers. Drawn from privately owned looms or lured from the farm to the factory, they found themselves hopelessly engulfed in poverty and practically slaves of the men who owned machines. New to the situation they found themselves opposed vigorously at each turn where they sought to better themselves. The liberal economic doctrine of <u>laissez faire</u> had

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[7] <u>Ibid</u>., p. 520.

operated to the distinct advantage of capital, to the disadvantage of the working man. The slums which grew up in the manufacturing districts were breeding places of disease and moral destitution. The workers were unknown to one another, they lacked even the rudiments of an education, and their efforts to combine for more effective action were thwarted by rigorous laws which forbade them to form associations.

The best chance for advancement on the part of the workers lay in a better education and in the strength to be derived from organization. But popular education was still woefully neglected. Of all the great powers of Europe in the first half of the nineteenth century Prussia alone possessed a public school system which reached part of the masses. Other countries left popular education to the churches or to private enterprise, giving it at best only halfhearted support. The beginnings of general popular education are to be traced independently in Switzerland, in Scotland, and in many of the small states of Germany.[8] Great Britain awakened with the Education Act of 1870; France passed a measure of like intent in 1881. By the end of the nineteenth century these two countries were approaching the low illiteracy rate already attained by Prussia. Likewise discouraging was the attitude of the various governments toward the combination of workingmen. Previous to 1824-25 it was illegal to effect a union for the promotion of workers' interests in England. Labor unions came into the open on the continent only after the revolution of 1848, and then their progress was effectually retarded. France definitely permitted her workingmen to form unions only after 1864. Thus it appears that the only avenues of escape for the worker had been

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[8] John T. Merz, A History of European Thought in the Nineteenth Century (Edinburgh: Wm. Blackwood and Sons, 1896-1914), I, 255.

effectually estopped in the early years of the Industrial Revolution.

But the growing tide of restlessness on the part of the lower classes forced itself to the attention of political and social leadership even during these first decades, and must be considered as a definite part of the intellectual background. It assumes its rightful place along with the social, political, and economic attitudes exhibited by the dominant classes. In the light of all these we must see the thought which was the product of these early decades of the nineteenth century.

The intimate connection of the industrial upheaval with the natural sciences makes it necessary to follow up the sketch of transformations wrought in the social, political, and economic spheres with a cursory survey not only of the immediate field of science but also in the general intellectual outlook. Glancing first at science, we notice the background of its nineteenth century development. The Copernican theory of the ordered movement of the planets around the sun had stimulated investigation into the whole body of phenomena connected with matter in motion. The shining names in this research are Kepler, Galileo, and Newton, whose work culminated in the theory of gravitation and the recognition of a majestic universe of law. Keeping pace with these brilliant physico-astronomical discoveries was the science of mathematics, culminating with the invention of calculus by Newton and Leibnitz. Other scientists were stimulated to new heights of attainment. The eighteenth century saw perceptible advances in botany, zoology, and ethnology, but all of these were outpaced by the tremendous development of chemistry under the guiding hand of Lavoisier.

The brilliant work of these men caused a tremendous

increase in the number of investigators in each of these fields, with the result that signal advances were made during the nineteenth century. It was about 1830 that Sir Charles Lyell headed the study of geology in a new and profitable direction by indicating that the present physical appearance of the earth can be attributed to the operation through an almost incalculable period of time of causes still busily at work today. The demonstration of this principle favorably affected the study of living organisms already undertaken by botany and zoology. These studies now concentrated upon the origin, growth, and structure of the great variety of vegetable and animal forms. Hypotheses as to the relationship of all life were supported by the records of the rocks as read by Lyell and others. By 1859 Darwin gave the world the first attempt to explain this relationship in detail, the first history of life based on a consistent postulate. Biological study and speculation from this point on converged upon a comprehensive principle which came to be called the theory of evolution.

Philosophy took a new track with Locke by sacrificing coherence and completeness in favor of a procedure which paid more attention to immediate sensory experience. As the father of empiricism, Locke tried to bring philosophy into closer touch with the natural sciences. In the years that followed there raged a conflict between the absolutist and dogmatic tendency, on the one hand, and the empirical and observational movement, on the other. This conflict was provisionally resolved by Kant who assigned a particular function to each and thus justified them both. But the nineteenth century's tremendous expansion of mundane life, its increasing concentration on the problems of earth and its marked withdrawal from the cold and unprofitable peaks of metaphysics

hopelessly disturbed the Kantian balance.[9] But even though it was true generally that empirical philosophies dominated the field, the absolute type predominated in Germany. In the work of Fichte, Schelling, and Hegel we see a number of world-constructions which, though romantic, were brilliant in their attitude toward contemporary discovery. Hegel cast the universe and God, himself, in an evolutionary mold, where both became as dynamic as Hegel's own age. Schopenhauer, however, marks the plunge into pessimism, and Nietzsche assigns to man the task of facing his earth-born destiny with just his earthborn powers.

The empirical schools were particularly active throughout the nineteenth century, flourishing in almost every European country and including a great variety of positions. Comte (d. 1857), the founder of the so-called Positivist school, felt that if the method of science were only resolutely applied to human affairs, nature and man would soon be joined in a magnificent synthesis. Herbert Spencer (d. 1903) was intensely preoccupied with the natural sciences, using evolution as a frame for his picture of the universe. Although these men were system-builders like the idealists, their systems purported to rest on the evidence of the senses and to meet the most severe criteria of science.

Even a cursory examination of nineteenth century philosophy seems to demonstrate that the natural sciences have with each new generation come more and more to dominate philosophic thinking. This tendency has lessened the emphasis upon what is remote and absolute in favor of the innumerable tiny data cognizable by our senses and instrumental in building up an ever changing, relativist world.[10]

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[9] Schevill, op. cit., p. 536.

[10] Ibid., p. 538.

The knowledge achievements of the nineteenth century were essentially scientific. Philosophies were no longer entirely interpreted along intellectual lines of the dogma of the church; instead, the scientific form of interpretation became more and more dominant.[11] The view, as represented in Laplace, which saw in everything which took place simply a shift of physical particles moving in accordance with absolute law was thoroughly mechanical, but it allowed man to control his environment by understanding its operation.[12] Along this same line the Darwinian hypothesis relieved one of assuming in plant or animal a certain nature which determined its growth, and assumed that causes had been operating to bring about results here as in inorganic nature.

The nineteenth century saw science approach the more intricate phenomena and the more hidden forces and conditions which make up and govern everyday life.[13] The great inventions of the three hundred years previous had been made without special scientific knowledge, often by persons who possessed skill rather than learning. They were urged on by the practical requirements of the age more than the power of an unusual insight acquired by study.[14] But the investigation of chemical, electrical, and mechanical phenomena caused men to delineate the elementary forces of nature, to understand these primary relationships, and to bring within their power multitudinous forces. Whereas earlier inventions had been made in countries where practical life, industry, and commerce were most advanced, the great inventions in the late nineteenth century in chemistry, electricity, and the science of heat were made in the scientific laboratory. Earlier inventions were stimulated by practical wants; later laboratory inventions

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[11]Mead, op. cit., p. 247. [12]Ibid., pp. 250 f.

[13]Merz, op. cit., I, 91. [14]Ibid.

themselves produced new practical requirements, and created new spheres of labor, industry, and commerce.[15]

Thus science and knowledge in the course of the nineteenth century overtook the march of practical life in many directions. The story of the diffusion of this knowledge, however, varies with the individual countries. Scientific progress in all fields hinged upon the general intellectual environment of each particular nation, upon educational agencies, upon societies or academies for the advancement of research. To the examination of these items we now turn.

Although Francis Bacon foretold prophetically the great change which the new philosophy was destined to work and Newton drew up the simple rules and gave the first brilliant application, it was the French philosophers of the latter half of the eighteenth century who promoted first the knowledge and research these pioneers had forwarded. Bacon's plan for promoting research through the co-operation of many minds was more thoroughly realized in the old French Academy than in the Royal Society of London; his desire to unite the branches of knowledge in a collective work underlies the great productions of Bayle and of the Encyclopaedists.[16] The problems suggested in Newton's Principia found treatment in the works of Clairault and Maupertuis, and Voltaire introduced into popular literature his view of the universe. But it was Laplace who late in the eighteenth century first explored the hidden resources of Newton's theories and placed them, along with the labors of other mathematicians and observers, in a completed picture of the universe.[17]

One of the major factors in the advancement of French science was the tremendous role of the academies. While the Royal

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[15] Ibid., p. 92. [16] Ibid., pp. 95 f. [17] Ibid., p. 97.

Society of London was supported by the contributions of its own members, the Paris Academy had, as far back as 1671, received the funds with which to commence its labors in connection with the survey of the kingdom and its extensive dependencies. This Academy had from the beginning secured the approval of the king and was largely supported in its organized scientific work by government funds. The major scientific discoveries of this period grew directly from the stimulation of these organized groups. The center of this academic system was the old Academy of Sciences, which, with a short interruption during the storm of the Revolution, survived to form the principal feature of the Institute. Allied with this institution, and partaking of its spirit, were the great schools of natural science, the great collections of natural objects, and later the great medical institutions.[18] It sought to protect scientific studies, attracted talent from the outside, rewarded foreign and French research, and tried to keep the scientific spirit of inquiry, as well as the form in which it found expression, pure and undefiled.[19] It saw the value of co-operative scientific endeavor, and found a place for minute research as well as the development and sway of great and governing ideas.

Still another great stimulus to the growth of the scientific spirit in France was popular favor and interest, urged on by a literature prolific in scientific ideas and interests. Even the most abstract reasonings of the mathematician were brought into some connection with the general concerns of mankind. In this respect also, France during the second half of the eighteenth century was far in advance of other countries.[20] Added to this was the French superiority in the teaching of science. Thus a

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[18] Ibid., p. 135. [19] Ibid. [20] Ibid., p. 104.

general interest was created in the proceedings of the Academy, and the discoveries of its illustrious members found their way into the lectures and textbooks of the professors. Prominent as connecting links between science and literature are the works of Voltaire, Buffon, D'Alembert, and Condorcet.

The science of mathematics reached its highest peaks during this period in the elaboration of the various infinitesimal methods of the French and English mathematicians, by which they were all brought together, simplified, and united into a calculus with strict rules, a practical notation, and an easy algorithm.[21] No learned body did more to perfect this new calculus than the Paris Academicians. Characteristic of French mathematicians, too, was the effort to establish pure mathematics on an independent foundation and to pursue either to geometrical or mechanical problems and applications.

Of even greater value than the popular writings of Voltaire and Buffon in diffusing the scientific spirit itself were the great schools of Paris. Most of the Academicians were trained in these schools, and some of them taught there. The Revolutionary governments showed a marked preference for the scientific side of instruction. Next to mathematics the subject most cultivated in these higher educational establishments of Paris at the end of the eighteenth century was the new science of chemistry. This science has often been identified with French soil, even though it was indebted to illustrious foreigners for some of its most important discoveries, because the modern scientific spirit of accurate measurement first took hold of chemical phenomena on a large scale in the many important investigations which bear the name of Lavoisier and his followers.[22] At about

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[21] Ibid., p. 100. [22] Ibid., pp. 114 f..

the same time two new sciences were set on a firm basis by Frenchmen, one the science of crystallography, the other the great theory of probabilities. Likewise did the great Georges Cuvier excell in his studies of individual and organized life.

During the great cataclysm of the Revolution and the reaction under Napoleon French science turned its investigations to the things immediately at hand. Deprived for a time of its riches, science made a new study of what it possessed. The sciences were urged by the government to concentrate upon the development of resources and materials within the possession of the country. Mechanics and chemistry rose to the assistance of the isolated nation during the continental blockade. Botanists were not able to gather so many plants in their collections, but they demonstrated more and more the intimate structure of the fruit, the seed, the various relations which connect the parts of the flower, and the indications which these relations furnish for a natural division.[23] Medicine and chemistry united their efforts to appreciate in the minutest detail the action of external elements on the living organism.[24] The early days of the Revolution had destroyed academies, universities, and colleges, but the effects of this began to show in the most telling sectors, for armies were without doctors and surgeons. A longer view of the situation brought increased support for educational and scientific institutions.

The influence of the first Napoleon on science is a controversial question. There can, however, be little doubt that he recognized scientific merit, and drew available men of science

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[23] Georges Cuvier, Recueil des éloges historiques lus dans les séances publiques de l'Institut Royale de France (Strasbourg: F. G. Levroult, 1819-27), II, 28.

[24] Ibid.

into the service of the government. The educational system upon which he prided himself had been in existence before him, or had been planned before his time. He favored the mathematical sciences and created great prizes for physical discoveries. Napoleon seems to have been one of the first great rulers to realize the important part which science was destined to play in the immediate future.[25]

To the eighteenth century's purely literary popularization of science the Revolution added the modern practical diffusion of scientific achievment; it established its educational and technical importance. Science was to be the basis of a national instruction, and the foundation of the greatness and wealth of the nation. Dangerous generalizations were removed from the Memoirs of the Academy; the language was confined to the measured and concise statement of facts, or to theories capable of mathematical verification and treatment. Conjectural matter was carefully excluded, and a standard of scientific excellence was maintained to which we still look with admiration. The rigid adherence of French investigations to this high standard caused many writers to name France as the home of the scientific spirit in the first decades of the nineteenth century.

That French biblical criticism failed to keep pace with the scientific currents of the age is at first glance astonishing. The new geology and biology culminating in the evolutionary doctrine, the great discoveries in the world of physics and chemistry, the scientific concept of a universe of law, all these were concepts which Protestant historical scholars were considering in their theories of biblical origins. Slow adjustments were taking place between the old faith and the new discoveries. But French

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[25]Merz, op. cit., I, 152 f.

biblical scholarship was predominantly Roman Catholic, and as such was bound to a defense of the older dogmatic position. The attitude of hostility toward the pronouncements of science on the part of the popes, culminating in the Syllabus of Errors (1864), at once eliminated all loyal Roman Catholic churchmen from the field of scientific criticism. That this has acted as a powerful deterrent to the present day is demonstrated by the unhappy situation of scholars such as Loisy whose scientific explorations were not entirely estopped by papal attitudes. Having no independence, such as German universities afforded their scholars, French writers have been forced to confine their activities to doctrinally innocuous subjects.

In sharp contrast to the churchly domination exercised upon French biblical scholarship has been the heritage of comparative freedom which Germany's system of universities has preserved for its scholars. The German university system greatly facilitated the growth of the scientific spirit. In the course of the eighteenth century the German university outgrew its earlier and more limited phases of existence, it emancipated itself from court and personal favoritism, from ecclesiastical protection and influence. Through special foundations or through the statutes of governments it secured larger and better secured means of subsistence. In the face of growing demand, it replaced the Latin tongue with the vernacular. The circle of studies, theology, law, and medicine, was made complete and unified through the addition of the fourth faculty, philosophy. Thereby a unifying principle was written into the nature of the university system, for the philosophical faculty embraces all those studies which aim at establishing truth, whether this be defined as merely formal or as real, as belonging to method or to knowledge. This new faculty,

which insisted upon liberty of instruction, found a definite place at the opening of the University of Göttingen (1734). The comparatively new University of Halle prided itself as the home of untrammelled investigation and untrammelled teaching in the first decades of the eighteenth century.[26] By the end of the century, however, Göttingen had surpassed her in the demonstration of this principle. Here Mosheim lectured on church history and theology, while Michaelis pursued his investigation of oriental subjects, each as unrestricted as his distinguished colleagues who labored in other fields of research. This libertas docendi was recognized as the foundation stone of the academic institution.[27] At Göttingen the chief stress was laid on the essentially modern sciences.

Because of their constitution as well as their number, the German universities were destined to become the most powerful institution for the diffusion of knowledge.[28] Further, they allied themselves more closely during the first decades of the nineteenth with the many hundreds of advanced and technical schools. For these they had to train the teaching staff, and from the ranks of these they recruited their own instructors.

Another factor which contributed to the rapid spread of ideas in Germany was the migratory spirit of students and professors. German university life was continually on the move from south to north, from east to west, exchanging and recruiting its

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[26]Friedrich Paulsen, The German Universities: Their Character and Historical Development, trans. E. D. Perry (New York: Macmillan and Co., 1895), pp. 61 f.

[27]Friedrich Paulsen, Geschichte des gelehrten Unterrichts auf den deutschen Schulen und Universitäten vom Ausgang des Mittelalters bis zur Gegenwart (Leipzig: Veit and Co., 1885), pp. 424 ff.

[28]Merz, op. cit., I, 165, 166.

forces, bringing heterogeneous forces into contact, spreading everywhere the seed of new ideas and discoveries.[29] The imaginative tendencies of the southern intellect represented by Hegel and Schelling were transplanted into the midst of the encyclopedic and logical sciences of the north, or into the center of industrial Switzerland in the person of Vischer. In Zeller the theological criticism of the Tübingen school wandered north to Marburg and Berlin.[30] Thus no one university could long retain supremacy in any single branch of learning.

The exact or pure sciences, as they were understood in the French Academy of Science, were not represented in the German University system until the beginning of the nineteenth century. The eighteenth century produced great German men of science, but their position was irregular and uncertain; they did not belong wholly to the university system. So far as philosophical and classical studies were concerned, the universities at the end of the eighteenth century were most progressive, but they did not (with the possible exception of Göttingen) include the modern spirit of exact research. The turn of events connected with the name of Carl Friedrich Gauss added greatly to the reputation of the University of Göttingen as a center of scientific research in the first decades of the nineteenth century. By the second quarter of that century the spirit of exact research had truly begun to leaven the German universities. It then entered the field as an equally important agent by the side of the philosophical and classical spirit. The experimental side of exact research received a great impetus by the establishment of the first chemical

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[29] J. Conrad, The German Universities for the Last Fifty Years, trans. John Hutchinson (Glasgow: David Bryce and Son, 1885), pp. 52-56.

[30] Ibid., p. 162, n. 1.

laboratories within the pale of the universities. To Giessen, where Liebig opened his celebrated laboratory in 1826, goes first honor in this direction.

When the spirit of exact research became diffused in Germany and entered the pale of the universities, it met there that peculiar ideal of learning which the German language terms Wissenschaft. The new spirit was not everywhere favorably received, but in the end it led to a firmer establishment of the true principles of research, a concept of unified thought and investigation. The life of the German universities had begun in the earlier centuries with the classical studies; it had been reformed by the theological and juridical requirements of the Protestant governments, and in the eighteenth century had found a new unifying principle under the philosophical faculty. Thus classical and philosophical studies had combined to create the ideal of Wissenschaft, or science, in the broadest sense of the word.[31] The conflict between the adherents of this ideal and the proponents of exact and detailed research gave rise to a great many currents of thought: (1) the more exact scientists were divided between (a) those who clung more exclusively to the empirical side, cultivating the descriptive and experimental sciences, and (b) those who developed the mathematical methods, with a certain ill-disguised contempt for pure empiricism; (2) the classical and philosophical adherents were divided between (a) those who cultivated the historical in contradistinction to the philosophical view, and (b) those who elaborated what they termed exclusively the critical methods, directing suspicion toward those who showed a desire to roam into outlying fields which did not permit of equally strict discipline and treatment.[32] We shall now note the

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[31] Ibid., p. 202. [32] Ibid., pp. 205 f.

contribution of these positions to the growing concept of the unity of research and knowledge.

The exact sciences encouraged the appropriation of materials from widespread sources, the completeness and thoroughness of research into beginnings. The empirical gathering and testing of facts, the use of scientific postulates, the rigid adherence to mathematical and mechanical principles, all these found a place in the new concept of science developing in the German university. The sciences which deal with the phenomena of life and consciousness were remodelled in the first half of the nineteenth century under the influence of this exact spirit coupled with the philosophical spirit peculiar to German science. The science of biology, resting upon mechanical principles, was thus created and its results brilliantly applied to the medical profession. The sciences of physiology and pathology deserve to be termed preeminently German sciences, for they developed under this growing concept of unity.[33]

It is the nature of all philosophical and historical studies that they deal with one great subject, not capable of easy division into independent parts. Since their interest attaches mainly to their exploration of the workings and manifestations of the human mind in the past and present, these studies must keep always in the foreground the idea of a great unity of action and purpose, must aim at completeness of view, and must refer all special researches to general principles and standards. That this view served as a healthy corrective for the exact sciences which might tend toward an isolated outlook is readily understandable. The two types of science fused into a new standard which aimed at completeness of outlook as well as precise analysis of individual

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[33] Ibid., pp. 216 f.

observable data. This combination of methods avoided extremes in either direction.

A powerful factor which deterred the German scientist from an isolated view of his subject was his life at the university, where he was surrounded by others whose labors came into contact with his own, or who treated the same subject from a different point of view. There were daily professorial contacts within and without the university. The theologian, the philosopher, the philologian, the historian, the student of nature, each must settle his mental accounts with the others.[34] Protestant theology bears the marks of this influence in its attempts to bring religion and science to an inward reconciliation; while Roman Catholic theology, living apart at the university, decreased its power of influencing the science and culture of the age.[35] But the influence was mutual, for science was affected by Protestant theological scholarship. Thus each scholar must define his field, justify his contentions, and integrate them in the general scheme of knowledge.

In addition, the German university man had teaching duties which forced the demonstration and simplification of his theories and principles. He must endeavor to make his principles and methods of research clear to younger minds, must guarantee a comprehensive survey, a complete treatment. This duty, coupled with his life in a community of research, made of every German teacher a philosopher. Whether consciously or unconsciously, he had to make clear to himself and his disciples the underlying principles he thought right, to defend them against attacks from others, or to modify them, as progressing research made it necessary.

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[34]Paulsen, The German Universities, p. 226.

[35]Ibid.

Schelling and Hegel exemplify the philosophy which early recognized that it must deal with the findings of the physical sciences, while the influence of Kant ineradicably impressed upon German physical science the necessity of a criticism of the principles of knowledge.

Thus the German ideal of Wissenschaft came during the early decades of the nineteenth century to embrace the following elements: (1) the exact methods of thought, mainly elaborated in France, which gave to science its accuracy and definiteness; (2) the love of completeness, of detail, the searching and exploring spirit of the historical and classical studies; and (3) the critical spirit which inquires into the value of principles and the limits of their usefulness. In addition, it should be noted that this ideal of Wissenschaft acquired a moral significance under the German university system. Here could be seen a large number of the most highly gifted members of a nation following a purely ideal cause, the pursuit of truth and the acquisition of knowledge for its own sake. These records of high aspirations, arising frequently among disheartening conditions, glow with all the fervor of a religious duty.

That scientific New Testament criticism should find its earliest home under the influence of the German university system was to be expected. The scientific biblical critic found its atmosphere conducive to exhaustive research. The spirit of the university demanded that scholarly endeavor in this sphere should adjust itself to the findings in other fields, that it should proceed upon principles justified in the light of all knowledge. Here at the university were gathered up and explored all the principles upon which the world operated, the findings which were results of industrial, social, political, and intellectual changes.

The scholars whose influence can be seen most readily in the rise of scientific biblical criticism were university men. Michaelis, Eichhorn, Heyne, Wolf, Herder, Lessing, Gieseler, DeWette, Strauss, Ullmann, Weisse, F. C. Baur, and Bruno Bauer were all intimately connected with the German university system, as were the rationalists like Paulus and the mediating critics like Schleiermacher and Neander. Men like Strauss and Zeller who received early training at Tübingen removed for later work to Berlin and Marburg, demonstrating the fact that the university system as a whole soon felt the effects of advance in any individual university.

Scholars in the German university system found themselves singularly free from the domination of church or state after the liberating influences of the eighteenth and early nineteenth centuries.[36] The control of the various universities, which for centuries had been in the hands of the theological faculties, passed over about the beginning of the nineteenth century into more unprejudiced hands. This in itself was favorable to the growth of New Testament criticism. As Paulsen indicates, there prevailed in the nineteenth century practically an absolute freedom in the actual carrying on of instruction in the university.[37]

It is most obvious that biblical criticism was heavily influenced by the entire university group and spirit. Criticism had to afford a mental discipline to the learner, and it had to become communicable and teachable. Conforming to these needs, it became specialized and more or less reduced to forms and methods. With the passage of time, it became increasingly more evident that criticism could be carried on from two clearly defined

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[36]Arnold Köttgen, Deutsches Universitätsrecht (Tübingen: J. C. B. Mohr, 1933), pp. 108 ff.

[37]Paulsen, The German Universities, p. 96.

points of view. In dealing with literatures and cultures of the past, with opinions and bodies of doctrine which have become tradition, one can pass judgment upon them either from the purely philosophical or from the historical point of view. In the first case, one must refer the subject to standards and principles which are assumed or demonstrated; in the latter instance, the object of study must be connected historically with its antecedents and surroundings in time and place. Nineteenth century German literature began to realize the fundamental difference between historical and philosophical criticism in theology, law, economics, and other branches of research.[38]

The interplay of mind with mind was felt by New Testament critics as they formulated their studies in the university. The whole realm of science, philosophy, law, medicine, and literature impinged upon the quiet study of the scholar, and demanded that he reckon with them. The estrangement between scientific thought and religion which was often found in Catholic countries, where universities possessed no faculties of theology, was hardly possible in Germany of the nineteenth century: "Let one but compare the French Aufklärung with the German; the former is irreligious, the latter essentially a religious movement."[39] Wolff and Kant had been in a sense reformers of theology, while Fichte, Schelling, and Hegel avowed that purpose directly.

The history of the spread of the scientific spirit in France and Germany early in the nineteenth century is almost identical with the history of two great organizations, the Paris Institute and the German universities. We turn now to a consideration of the spirit of scientific research in England, the country

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[38]Merz, op. cit., III, 131-135.

[39]Paulsen, The German Universities, p. 227.

which, in advance of France and Germany, had produced the greatest scientific model of modern times, the Principia of Newton.[40] What was the state of science in Great Britain during the period when Paris academicians and German professors combined to carry the spirit of modern scientific thought into its wide applications?

It is not to be denied that England made far-reaching scientific advances in the outstanding work of such individuals as Black, Herschel, Priestly, Cavendish, Davy, Young, Dalton, Faraday, Rowan Hamilton, Brewster, Lyell, Charles Bell and others. The Royal Society, if not older than the French Academy, is certainly older than the Paris Academy of Sciences, and had in the beginning of the nineteenth century long emerged from the poverty which was her dominant character in the days of Newton. Further, the universities of Oxford, Cambridge, Edinburgh, Dublin, and Glasgow are older than most of the German universities whose names stood high in scientific research, while the wealth of the two older English universities was far and away above that of any continental rivals. And yet, in the face of these facts, it could be said in all fairness that the scientific spirit was not so widespread in England as in Germany or France. What were the deterrent factors?

It is to be noted pre-eminently that individuals received little united support in their scientific researches from societies or universities,[41] nor were the academies and universities always impartial in their dealings. Although instances may be cited to demonstrate the same contention with regard to Germany

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[40] Merz, op. cit., I, 226 f.

[41] This proposition is discussed at length in Merz, op. cit., I, 244 f.

and France, a neglect of individual researches existed in England which could not be rivalled on the continent. In nineteenth century England no organization annually collected and arranged the scattered labors of individual workmen, there was no general encyclopedic spirit to guarantee completeness and thoroughness of search and research.[42] Great pioneers remained almost unknown to their countrymen, who in many instances not only neglected but reviled them. Thomas Young was scarcely known to his countrymen; John Dalton, an outstanding figure in chemistry, grew old before he was sufficiently recognized and honored; Faraday was backed by no wealthy academy, but, during the years of his greatest discoveries, was existing on an income scarcely exceeding a hundred pounds a year; George Green, George Boole, and Babbage had similar experiences.

British science through all the centuries has refused to congregate in distinct schools and institutions or to be localized in definite centers;[43] everywhere the schemes of co-operation or organized scientific research have encountered opposition from individual pursuits and local interests. The views of great English scientists found schools of followers in France and Germany, found their way into German textbooks before they were well-known to Englishmen. English societies honored and admired, but did not support their great representatives; the scholars for their part often refused to be tied by exclusive academic duties or by official restrictions. Not only have English scientists zealously guarded their individual freedom, but they have shown a tendency to combine some practical application with their abstract researches. These differences between English and

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[42] Ibid., p. 243. [43] Ibid., pp. 249 f.

continental science were most evident in the early decades of the nineteenth century.

Another factor which retarded the spread of scientific ideas in England was the idea of a liberal education and the conservatism which characterized English schools. The two great universities of England possessed their own peculiar outlook; neither the scientific, nor the classical, nor the philosophical spirit reigned there exclusively. Hence we find repeated complaints that higher mathematics were absent at Cambridge, that no philological studies were cultivated in either of the universities, and that philosophy was represented merely by Aristotle, Butler, Locke, and Paley.[44] The older traditions which clung to the two great universities prevented any of the continental ideals from establishing themselves. It may be noted that neither Young, nor Davy, nor Faraday, nor Dalton, nor Joule can in any sense be identified with the official school of English mathematics at Cambridge. The universities held fast to their dominating idea that the real object of university education was not to be confused with any special methods or schools of thought, but was expressed in the ideal of a liberal education.

During the latter part of the eighteenth century the Scottish universities had become formidable rivals to the learning of Oxford and Cambridge. They did not foster an exclusive spirit, but lived in constant exchange of professors and ideas, modelling themselves after the German rather than the English system. For this reason the universities of Scotland played a much greater part in the growth of science that did those of England. All eminent Scottish men of science were connected with

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[44]Some of these complaints are listed by Merz, op. cit., I, 254 f., n. 1.

universities, often teaching in several of these centers.

The nature of the English universities conditioned the science of New Testament research along with other sciences. Since there was comparatively little interplay between various colleges and various fields of research, biblical scholars found themselves largely conforming to rigid traditions of criticism. The nature of this influence was extremely conservative, so that writers tinged with a slight degree of liberalism found it to their advantage to sever connections with college circles. When Samuel Davidson began to abandon his apologetic outlook on the New Testament, he found it necessary to resign his professorship in Lancashire Independent College to acquire full freedom for the prosecution of his critical studies. The scholastic ideal of scientific criticism which developed in Germany found no parallel in the German university English educational institutions.

In addition to these divergent factors, biblical criticism had to face the conservative influence of the English church. This attitude was forcibly demonstrated as late as 1860 by the storm which broke upon the heads of the various authors represented in Essays and Reviews.[45] Although the ideas embodied in this series of articles had found expression in radical form in Germany years before, and had been promulgated from the days of Whately and Thomas Arnold by writers belonging even to the Anglican Church, Essays and Reviews brought some of its authors to trial for heresy. The fact that a vast majority of English biblical scholars, such as Jowett, Stanley, and Westcott, were dependent upon ecclesiastical salaries is not to be forgotten. Thus any influences which may have urged the New Testament

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[45] Essays and Reviews (9th ed.; London: Longman, Green, Longman and Roberts, 1861).

scholar to scientific production were largely stifled by a conservative educational atmosphere and a dominantly conservative church. Involved in this, too, is the predominantly conservative social and cultural tradition of the English people. Although the German intellectuals, through their inclusive and receptive ideal of Wissenschaft, were eager to assimilate newer ideas and methods, the conservative stripe of English culture made her intellectuals concerned with older ideals and methods. But even though the scholar might break with his cultural heritage, he could not pursue his research within protecting walls such as the German university provided, nor was he free to do his work privately unless he braved the wrath of the church which supported him. Such were the effectual brakes which hindered the progress of scientific criticism in England.

CHAPTER IV

THE BEGINNINGS OF SCIENTIFIC CRITICISM

The year 1835 marks the beginning of a new era of New Testament criticism, for in that year appeared two works unreservedly committed to the scientific principles of research. The first was David F. Strauss' Life of Jesus,[1] which threw a bombshell into the camps of orthodoxy and rationalism alike; the second was Ferdinand C. Baur's work on the Pastoral Epistles,[2] a forceful attempt to judge these documents in the light of the environment which they seem to indicate. The methods which these studies exhibit are so radically different from their predecessors in the field of New Testament criticism that they deserve detailed comment.

Strauss had as his professed aim simply this: to treat the gospel narratives precisely as one would treat any other tradition, to exhibit a method of critical inquiry hampered by no prescribed results, and to claim for biblical criticism independence of all foregone conclusions.[3] This independence would involve, for instance, disbelief in miracles, since faith in miracles rested upon an insecure foundation. Strauss claimed that

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[1] Das Leben Jesu, kritisch bearbeitet (2 vols.; Tübingen: C. F. Osiander, 1835-36).

[2] Die sogenannten Pastoralbriefe des Apostels Paulus aufs neue kritisch untersucht (Stuttgart: J. G. Cotta, 1835).

[3] R. P. Dunn, "The Tübingen Historical School," Bibliotheca Sacra and Biblical Repository, XIX (January, 1862), 80.

the law which inseparably connects natural causes with natural results in other departments holds equally good in the realm of scripture history; and that what in all other cases is regarded as evidences of unhistoric character cannot in this be a sign of higher historic truth.[4]

The distinctive mark of Strauss' work is its unswerving adherence to the mythical theory as the best available explanation for the origin of the gospel narratives. In the preface, Strauss distinguishes his own position from that of orthodoxy as well as from that of rationalism. Orthodoxy proceeded upon the twofold assumption that (1) the gospels contained history, and (2) they recorded supernatural history. The rationalists denied the latter only to assert more firmly the former, that these books had in them pure, though natural history. Strauss proposed to drop both assumptions and to determine how far we stand in the gospels upon historical ground.[5] That the mythical theory had been applied by others he did not deny, but not in its pure form nor to its full extent; too much history had been expected in details, in spite of the acknowledged mythical character of the gospels in general.[6] The application of this theory had always been too limited; even though mythical elements were admitted in the childhood narratives and at the close of Jesus' life, the intermediate narrative had escaped the effects of a rigid application of this guiding principle.[7] Since this limitation seemed to the author untenable, he proposed "to apply the principle of myth to the whole extent of the story of the life of Jesus, to find mythical narratives, or at least embellishments, scattered throughout all its parts."[8]

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[4]Ibid. [5]Strauss, op. cit., I, iv, v. [6]Ibid.
[7]Ibid., pp. v, 46 ff. [8]Ibid., p. v.

The dominance of the Hegelian philosophy in the mind of Strauss is shown by his condemnation of the rationalists and naturalists who sacrifice the divine content of the sacred story and cling to its empty historical form; he prefers rather to sacrifice the historical reality of the narrative and keep its absolute (eternal and spiritual) truth.[9] He firmly believes that "the essence of the Christian faith is perfectly independent of his criticism."[10]

The rigid application of the mythical theory to all parts of the gospel story was not in Strauss restrained by presuppositions concerning the apostolic authorship of one or more of the gospels. His examination of external and internal evidence had led him to discard the theory that either Matthew or John could have been composed by an eyewitness of the events which the gospels purported to portray.[11] Thus Strauss cast off the shackles which had previous to 1835 prevented a thoroughgoing application of the mythical theory; with these restrictions gone, he now [illegible] how [illegible] that myths could attach to their [illegible] status in the years which intervened between the death of Jesus and the composition of these documents.[12]

Strauss defines a myth as a narrative relating directly or indirectly to Jesus, which is to be considered, not as the expression of fact, but as the product of an idea of his earliest followers. The "pure mythus," where the myth constitutes the substance of a narrative, is found to have two sources: the one source is the messianic ideas and expectations existing according to their several forms in the Jewish mind before Jesus,

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[9] Ibid., p. 52. [10] Ibid., p. vii. [11] Ibid., pp. 62 ff.

[12] Ibid.

and independently of him; the other is that particular impression left by the actual Jesus which served to modify the messianic idea in the minds of his people. The "historical mythus" has as its basis a definite individual fact which has been seized upon by religious enthusiasm, and twined around with mythical conceptions culled from the idea of Christ.[13]

In the further elaborations of his principle, Strauss gives the criteria by which to distinguish the unhistorical in the gospel narrative. The myth presents two phases: in the first place, it is not history; in the second, it is fiction. These two phases afford both a negative and a positive criterion by which the myth is to be recognized. An account is to be regarded as not historical: (1) when the narration is irreconcilable with the known and universal laws which govern the course of events, and (2) when it is inconsistent with itself, or is in contradiction with other accounts. The positive characters of legend and fiction are to be recognized sometimes in the form, sometimes in the substance of a narrative, especially in the following: (1) if the form be poetical. If the actors converse in hymns, and in a more diffuse and elevated strain than might be expected from their training and situations, and (2) if the contents of a narrative strikingly accord with certain ideas existing and prevailing within the circle from which the narrative proceeded.[14]

That the boundary line between historical and the unhistorical, in the case where mythical elements were involved, would remain fluctuating and unsusceptible of precise attainment was

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[13]These definitions are elaborated explicitly in Strauss, The Life of Jesus Critically Examined, 4th German ed., trans. George Eliot (2d ed.; London: Swan Sonnenschein and Co., 1892), pp. 86 f.

[14]Ibid., pp. 87-92.

admitted by Strauss, himself.[15] His work, however, stands as a monument of unflinching adherence to his critical principle. The results of this principle we shall note later, together with a consideration of the scholarly reactions which it occasioned.

The second work which made 1835 a memorable year in the history of New Testament criticism was Ferdinand Christian Baur's Die sogenannten Pastoralbriefe. His researches into the Christian Gnosis,[16] published in the same year, had led Baur to examine the New Testament for traces of this phenomenon; he concluded that the heretics and false teachers opposed by the pastorals could be no other than the Gnostics of the second century, in particular the Marcionites. This gave objective [illegible] to [illegible] cism of these epistles instead of the [illegible] methods of scholarship of previous critics. Baur's method [illegible] room in the conception of the conditions of primitive Christianity, had an objective viewpoint not attained by the previous researches on the biblical subject by Eichhorn, De Wette, and Schleiermacher.[17] The tremendous value of this work on the Pastoral Epistles was its strict adherence to the methodological principle that a work must be interpreted and understood in the light of the environment which gave it birth.

The plain indications which these epistles gave convinced Baur that they could best be fitted into the picture of second

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[15] Ibid., p. 91.

[16] Die christliche Gnosis; oder, die christliche Religions-Philosophie in ihrer geschichtlichen Entwicklung (Tübingen: C. F. Osiander, 1835).

[17] Die sogenannten Pastoralbriefe, pp. 1 ff.

century Gnosticism. The myths and genealogies,[18] the antinomianism,[19] the Marcionite teaching concerning the resurrection,[20] as well as numerous other points, indicate indubitably to Baur the Gnostic tendencies which the pastorals sought to correct, the circumstances in which they came into being. In addition, he brings to support his theory the outside witnesses to the appearance of these letters.[21] An analysis of the ecclesiastical organization depicted,[22] together with its hierarchical tendency[23] and the general character of the heretics described, leads Baur to posit second century Rome as the heimat of the author.

Baur's theory of the pastorals took immediate precedence in the field of scientific criticism, for it best explained the letters in the light of other facts. It was thoroughly scientific in method throughout, and opened new lines of investigation in this direction. How his developing theory of the origins and early growth of Christianity affected subsequent researches we shall note later.

That these two earliest examples of scientific New Testament criticism should appear in Germany does not seem strange in the light of our foregoing studies. While it is true that the principles of economic progress had found their first outworking on a large scale in England's industrial revolution, those principles had also spread to France and Germany. It is a commonplace that the Industrial Revolution spurred on to new heights the development of the natural sciences, and those sciences nowhere found as rapid advance as under the approbation of the French Academies and the tutelage of the German universities.

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[18] Ibid., pp. 11-14. [19] Ibid., pp. 14-18.

[20] Ibid., pp. 38, 39. [21] Ibid., pp. 136-142.

[22] Ibid., pp. 78-86. [23] Ibid., pp. 87 ff.

When inventive genius, at first the product of the practical mind, turned to the laboratory, its mechanical output of new devices was as high in France and Germany as in England, although neither France nor Germany kept pace with Britain industrially in the first decades of the nineteenth century. The factors which restricted the industrial growth of the continental countries did not prevent the spread of industrial and mechanical principles to those centers where it would contact natural science, biological science, philosophy, and biblical criticism. The mechanical principles which were so brilliantly worked out in an industrial unheaval found their mark in mechanistic theories of the physical sciences, mechanistic and almost invariable interpretations of the biological sciences, in renewed emphasis upon a mechanistic and law-abiding universe in philosophy, and in a New Testament criticism which employed induction and obedience to physical law as its method and canon. The principles made observable by the Industrial Revolution did much to shatter old theological concepts which hindered investigation, and opened the way for a scientific study of biblical records.

That social and political ideals of reform had advanced farther under English liberalism than in France or Germany is not to be denied. But here again the limiting factors of the continental countries did not hinder the expression of these ideas in literature nor their impress upon the people. English liberalism had prospered largely because it was the program of the industrially successful middle class.

Previous pages have shown at length the intellectual atmosphere of the three countries, and the influences which would be exerted upon biblical criticism. In the comparative freedom of the German university the various influences of the contemporary

world played upon the mind of the New Testament scholar. The principles of induction, of mechanism, with their tremendous effect upon natural and biological science, were not to be disregarded. German science, displayed pre-eminently in those same university circles, was subject to those principles. In the close associations of the university arose these first works of scientific New Testament criticism. In the light of conditions in 1835, it is most natural that it should have been so. University and church influences in England, together with the general character of English science, made advance in that country very slow even after another quarter-century had elapsed; Roman Catholic control of all centers of French biblical scholarship made advance there almost negligible.

Strauss' Leben Jesu and Baur's Die sogenannten Pastoralbriefe profited by the researches of older scholars, only a few of whom can be mentioned in this study. Semler, Lessing, and Herder had enunciated the principle that the books of the Bible must be read and criticized as human productions; Eichhorn had attempted a systematic application of this principle in his voluminous works upon the Old and the New Testaments. Gieseler had labored to find the common source of the written gospels, and De Wette's work on New Testament problems shows remarkable freedom from dogmatic presuppositions.

Johann Salomo Semler (1725-1791) spent his theologically productive years as professor in the University of Halle, where his fame rested chiefly upon his ability as a critic of biblical and ecclesiastical documents. He rejected with sufficient proof the equal value of the Old and New Testaments, questioned the uniform authority of all parts of the Bible, disproved the divine authority of the traditional canon of scripture, brought into

question the inspiration and supposed correctness of the text of the Old and New Testaments, and challenged the identification of revelation with scripture.[24] His writings show that he noted and used for critical purposes the opposition between the Judaic and anti-Judaic parties in the Christian church,[25] a principle which F. C. Baur later employed at great length. Semler revived previous doubts as to the Pauline origin of Hebrews; he questioned the authenticity of I Peter and referred II Peter to the end of the second century; and the Apocalypse he would have removed from the canon.[26] In textual criticism Semler pursued further the policy adopted by Simon and Bengel, that of classifying manuscripts in families.[27] Semler's chief contribution to criticism was his espousal of the principle that scripture and its validity were to be judged by the historic circumstances of the age for which the writings were intended. Semler introduced this principle indiscriminately into prophecy, miracle, narrative, and doctrine [illegible] with the [illegible] it [illegible]

[illegible] appeared mo[illegible]rical th[illegible] Lessing (1729-1781) exerted a liberal[illegible] gospel [illegible]izing [illegible] [illegible] literature and theology. His [illegible]ter death [illegible] effor[illegible]re directed against German imitation of foreign models; he urged on a new movement toward German classicism, and his own writings often dealt with German common life. The last period of his life was devoted to theological controversy, largely occasioned

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[24] Semler, Abhandlung von freier Untersuchung des Canon (3 vols.; Halle: Carl Hermann Hemmerde, 1772-73).

[25] Introductio ad doctrinam christianam, Bk. I, cited by Adam Storey Farrar, A Critical History of Free Thought in Reference to the Christian Religion (New York: D. Appleton and Company, 1864), p. 223.

[26] Abhandlung von freier Untersuchung des Canon.

[27] Apparatus ad liberalem Novi Testamenti interpretationem (Halae: Io. Godofredi Trampii, 1767).

by his publication of fragments from the writings of the rationalist, Reimarus (1774).[28] In reply to critics who questioned his orthodoxy, Lessing claimed the right to free criticism even of the highest subjects of human thought. He pointed out that the Christian church was a conquering force before the New Testament was recognized; the Bible cannot be considered necessary to a belief in Christianity. The true evidence for what is essential in Christianity is its adaptation to the wants of human nature. Although the Brunswick government stopped his theological controversy, Lessing resorted to drama and philosophy to further his contentions. No dogmatic creed could be declared final, for every historical religion had its share in the development of the spiritual life of mankind. History reveals a definite law of progress; occasional retrogression may be necessary for the advance of the world toward its ultimate goal. Thus would Lessing have the biblical documents viewed as human products of an historic moment, to be judged in the light of the conditions which called them forth.[29]

Johann Gottfried von Herder (1744-1803) was associated with Lessing in his efforts to liberate German literature from its slavish dependence upon foreign models, but he broke with German classicism to join the more nationalistic Sturm und Drang movement, to which the young Goethe was also lending his efforts. This school of young writers was fast developing the doctrine that all great literature is the expression of the impulses and movements

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[28]Gotthold Ephraim Lessing (ed.), Fragmente des wolfenbüttelschen ungenannten (4th ed.; Berlin: Sander, 1835).

[29]James Sime and J. G. Robertson, "Lessing, Gotthold Ephraim," Encyclopaedia Britannica, Vol. XVI, 11th ed.

of its time and environment--German literature, they believed, would attain pre-eminence only when it became the true expression of German life.[30]

Herder conceived the idea that literature and art, together with language and all national culture as a whole, are evolved by a natural process, and that the intellectual and emotional life of each people is correlated with the peculiarities of physical temperament and of material environment. In this way he became the originator of that genetic or historical method which has since been applied to all human ideas and institutions.[31] This colors all of his writings, and is intimately connected with some of the most characteristic attributes of his mind, a [illegible] value [illegible] sympathetic imagination, a fine feeling for local differ[illegible] eclectic, subjective and a scientific instinct for seizing the sequence [illegible], based on a wide general [illegible] effect.[32] In poetry, Herder sought to effect [illegible] Christianity and and spontaneous forms of utterance; in art, he argued [illegible] classic examples as an unchanging type; in language [illegible] rude foundations for the science of comparative philology, in religion, he helped to lay the foundations for the comparative science of religion and mythology; and in philosophy he sought to explain human development in close connection with man's physical environment.[33]

Some of the principles enunciated by Semler, Lessing, and Herder found their mark in the works of Eichhorn, Gieseler, and De Wette. Johann Gottfried Eichhorn (1752-1857) received at

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[30]Calvin Thomas, A History of German Literature (New York: D. Appleton and Company, 1928), pp. 280 ff.

[31]James Sully, "Herder, Johann Gottfried von," Enclyclopedia Britannica, Vol. XIII, 11th ed.

[32]Ibid. [33]Ibid.

Göttingen excellent training under the orientalist Michaelis. His writings upon the Old Testament have caused him to be denominated one of the founders of modern Old Testament criticism. Eichhorn took it for granted that supernatural facts relating to the Old Testament were explicable on natural principles; he sought to judge the supernatural in terms of the ancient world. He saw in the biblical books few religious ideas important for modern times; they were interesting to him chiefly for their light upon antiquity. His method, which he applied to the New Testament also, placed him within the pale of rationalism, according to many of his contemporaries. Eichhorn questioned the genuineness of II Peter and Jude, denied the Pauline authorship of the pastorals, and suggested that the canonical gospels were based upon various translations and editions of a primary Aramaic gospel.[34]

Johann Karl Ludwig Gieseler (1792-1854), a product of the University of Halle, sought to explain the differences between the gospels by the hypothesis of an oral tradition as the common source. His work indeed explained the differences more easily, but made their agreement in details more difficult.[35]

Wilhelm Martin Leberecht De Wette (1780-1849), who was intimately connected with the Universities of Jena, Heidelberg, Berlin, and Basel, early came under the influence of Herder. De Wette was rather free from dogmatic prejudices, and his profound learning, keen insight, and fine linguistic perception made him one of the most outstanding New Testament scholars previous

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[34] Einleitung in das Neue Testament (5 vols.; Leipzig: Weidmann, 1804-1827).

[35] Historisch-kritischer Versuch über die Enstehung und die fruhesten Schicksale der schriftlichen Evangelien (Leipzig: Wilhelm Engelmann, 1818).

to 1835. His method, however, had its limitations: since it was largely subjective and formal, it could be met by others of much the same weight. He neglected the general character of a book and its place in the history of the early development of the church. Since this was the case, he usually failed to arrive at any final result. The problem of the gospels he never solved satisfactorily. Although he concluded that Ephesians, the pastorals, II Peter and the Apocalypse could not be genuine, he could ascertain nothing positive as to their date, character, or church circle, nor could he ascertain the purpose for which they were composed.

The criticism of De Wette, representative of the best previous to 1835, was at best purely negative and preliminary to the main task, that of discerning the historical origin of the New Testament writings and their place in the formation of early Christianity. This task was not performed until the work of Baur and those directly associated with him. It was not enough to challenge the authenticity of this or that document; its origin must be discerned, its purpose delineated, and its function in the early Christian communities detected.

The position of Schleiermacher was a regressive one. Although he denied the direct apostolic authorship of Matthew, he affirmed that of John still more emphatically, thus flying in the face of the principles enunciated by Herder and his followers. His lectures on the life of Jesus, published thirty years after his death,[36] had injurious effects upon the healthy development of gospel criticism. Even though he denied the authenticity of

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[36] Friedrich Daniel Ernst Schleiermacher, Das Leben Jesu. Vorlesungen an der Universität zu Berlin im Jahr 1832, ed. K. A. Kutenik (Berlin: George Reimer, 1864).

I Timothy, he accepted II Timothy and Titus as genuine,[37] failing to see the un-Pauline character common to the three plainly connected epistles. In this, Schleiermacher was much inferior to Eichhorn and De Wette, and yet his tremendous influence upon the theological world gave his studies of the New Testament undue importance.

The rationalistic critique of gospel narratives cannot be considered scientific either in its method or its results. These scholars, most ably represented by Heinrich Eberhard Gottlob Paulus,[38] started from the principle that the gospels must be combed for actual facts, not for poetry or legends. The facts found were natural and not supernatural events, their supernatural tone had been given through the errors of commentators and through the erroneous apprehension and judgment of the narrators.[39] It should be the true task of the scholar to pierce through these highly colored stories to the natural events which form their basis. Thus when the supernatural trappings are removed from the birth stories they are reduced to deceptions cunningly practiced upon Mary. Jesus does not walk on the sea but by the sea on the shore. The resurrection was an awakening from apparent death by tetanus. But the rationalist explanations had no decisive answer for the question as to the function of these narratives in the early communities. Its analyses were thoroughly eclectic in method, giving no objective principle by which one might understand

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[37] Schleiermacher, Einleitung ins Neue Testament, ed. G. Wolde (Berlin: George Reimer, 1845).

[38] Das Leben Jesu, als Grundlage einer reinen Geschichte des Urchristentums (Heidelberg: C. F. Winter, 1828).

[39] Otto Pfleiderer, The Development of Theology in Germany Since Kant, and Its Progress in Great Britain Since 1825, trans. J. Frederick Smith (London: Swan Sonnenschein and Co., 1890), p. 211.

the composition or use of the gospel narratives.

In the light of methods employed previous to 1835 it is not surprising that the scientific principles demonstrated by Strauss and Baur should have caused immediate reactions in the scholarly world. Strauss had severed his professorial relations with Tübingen in order to complete work on Das Leben Jesu; the reactions to his rather negative picture of Jesus blocked his efforts to re-enter the pale of university teaching. The metaphysics of Hegel had enabled Strauss to view the absolute value of Christianity apart from his criticism of the gospel narratives. The daring of his method, coupled with dissatisfaction with his philosophical reconstruction, evoked numerous responses from the scholarly world.[40] We shall note only a few of them.

August Neander, long associated with the University of Berlin, belonged to the mediating school of Schleiermacher. This school, with all its supernaturalistic leanings, had made too many concessions to critic[illegible] be able to co[illegible] Strauss' procedure unconditionally.[41] Gott[illegible] Ephraim Je[illegible]ated in most striking manner [illegible]nfluen[illegible] upon [illegible] tis[illegible]ory critique of gospel narratives by we[illegible] di[illegible] sub[illegible]e [illegible]thods. Neander cannot wholly accept miracles, neither can he wholly dispense with them; he explains them as resting on higher laws, at present unknown, the sign of a higher order of creati[illegible]orces acting in our natu[illegible] He posits various degrees of the supernatural, miracles of healing involving a less degree of it than control over

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[40]Carl Schwarz, Zur Geschichte der neuesten Theologie (3d ed.; Leipzig: F. A. Brockhaus, 1864), pp. 98 ff.

[41]Pfleiderer, op. cit., p. 219.

[42]Das Leben Jesu Christi in seinem geschichtlichen Zusammenhange und seiner geschichtlichen Entwickelung (6th ed.; Gotha: Friedrich Andreas Perthes, 1862). The first edition of this work appeared in 1837.

the forces of nature. His explanations of the miracle at Cana, the raising of the dead, and the star of the magi are clear examples of the rationalistic method. By resort sometimes to vision, sometimes to allegory, often to rationalism, he alleviates many difficulties; but the entire procedure falls far short of a refutation of Strauss and his method. Neander's devotion to the theology of feeling or dependence leaves us no clear idea as to method in the criticism of gospel narratives.[43] His dogmatic presuppositions and eclectic treatment give no unified procedure in gospel criticism.

Carl Ullmann's critique of Strauss[44] penetrated more to the heart of the problem than did Neander's. Although he admits that some of the gospel narratives are legendary in character, he contends that it is not necessarily true that everything is mythical; the problem of the historian is to demarcate the boundaries of the historical and the mythical. Ullman contends that Strauss' work failed to yield positive results, that it confined itself to the mere negation of the traditions. Under the formulation of Strauss Jesus would be a creation of the church; his philosophy does not allow for the gifted individual but sees the idea fully unfolded only in the race as a whole. Ullmann saw the ideal sinless Christ as the supreme point of concentration for revelation of all times. Strauss afterward[45] rejoined that he recognized Jesus as a religious genius historically unique, but he refused to follow Ullmann and Schleiermacher in converting this uniqueness of genius into absolute perfection, or to raise it altogether

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[43] Schwarz, op. cit., p. 122.

[44] Carl Ullmann and J. Müller, "Strauss' Leben Jesu," Theologische Studien und Kritiken, 1836, Heft 3, pp. 770-890.

[45] Vergangliches und Bleibendes. Zwei friedliche Blätter (1838-39), cited by Pfleiderer, op. cit., p. 221.

above the plane of history. In order to support his rejoinder, however, Strauss felt it necessary to admit the Fourth Gospel as an historical authority, producing wavering uncertainty in the third edition of his Leben Jesu. This concession did not raise his theological position in the eyes of the public, but it lowered considerably the level of scholarship maintained in earlier editions. Recognizing his error, Strauss retraced this false step in his fourth edition, but his vacillation had shown his totally inadequate treatment of the documentary sources and their relation to each other. This was a fundamental question for a life of Jesus.

The first very thorough critique of the documentary sources for a life of Jesus was supplied in 1838 by Hermann Weisse.[46] He recognized in the work of Strauss the necessary task of destructive criticism, a step which had to be taken before positive construction upon a scientific basis could commence. Weisse's detailed investigation of the literary relations of the gospels brought him to affirm Mark's priority, a conclusion directly opposed to the ramainder of scholarly opinion. His work upon the Fourth Gospel was not so satisfactory; he held that it was composed by a disciple of the apostle John. Although it had no claim to direct historical accuracy, it was based upon historical reminiscences of the apostle, colored both by the mind of the apostle and the process of literary composition. He did not view the gospel as the unified outworking of a symmetrical plan, at which point he was inferior to Baur, even as he was superior to Baur in his ideas on synoptic relations.

Weisse fully agreed with Strauss in his rejection of the

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[46] Die evangelische Geschichte kritisch und philosophisch bearbeitet (2 vols.; Leipzig: Breitkopf und Härtel, 1838).

miracles as unhistorical because they were contrary to natural law. He agreed also that in these narratives one should see religious myths, although he was dissatisfied with Strauss' explanation of them. Weisse held that these myths did not originate from a mechanical transference to the Messiah Jesus of conceptions and legends already given in the Old Testament, but that they were the products of the religious spirit of Christianity which sought to express ideal truth in these symbols, to see in Christianity the fulfilment of all previous Jewish and heathen anticipations. The miracles Weisse pictures as religious allegories representing the imagination of the primitive community, which did not distinguish between the poetic form and the ideal content. The gospels are thus seen as the products of rich spiritual genius, of a productive, creative consciousness of the divine spirit.

This way of looking at the gospel narratives, together with a masterful investigation of the literary relations and value of the authorities, provided the avenue by which scholarly treatment might leave the rather negative criticism of Strauss and obtain a positive understanding of the gospels.[47] It was the Tübingen School which exploited the possibilities of this method.

Possibly the fairest estimate of Strauss' contributions and his limitations is to be found in the Introduction to F. C. Baur's work upon the Canonical Gospels.[48] In his relentlessly logical negative criticism lie both the strength and the weakness of Strauss' position. What result could be reached from the investigations then carried on into the origin and mutual relation

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[47] Pfleiderer, op. cit., p. 224.

[48] Kritische Untersuchungen uber die kanonischen Evangelien, ihr Verhältniss zu einander, ihren Charakter und Ursprung (Tübingen: L. F. Fues, 1847).

of the gospels except a purely negative one? Strauss intended his work to lead men out from conflicting opinions and methods into historical knowledge; it failed to give them positive results, but it made them peculiarly conscious of the faultiness of their own methodology.

In order to get beyond Strauss' negative results, Baur insisted that the criticism of gospel history must become the criticism of the documents which are the sources for this history. To prevent contention over mutually exclusive hypotheses, the special characteristics of each gospel must be exactly ascertained, the literary features and objects of its author must be investigated, and its relation determined to the general circumstances of the time out of which it arose. Since all writings bear the impress of their times, their authors being touched by the parties, struggles, and interests of the moment, we can gain the firm ground of firm historical truth only be determining the aim and purpose of each author. Since a special motive is most noticeable in the Fourth Gospel, Baur took it as the point of departure for his inquiry.

In his researches upon the gospels, Baur applied the critical principle which he had been developing for over a score of years, the firm belief that various writings must be judged in the light of the strife between pro-Jewish and pro-Pauline parties which they pictured. This was the central item among all the criteria by which he judged the time, place, and purpose of various early Christian writers: what stage of the conflict between Jewish and anti-Jewish parties did the particular composition reflect? The development of this critical principle may be seen in his earlier works.

Baur's determination to become thoroughly at home in the

environment of the New Testament writings issued in a masterful work on Symbolism and Mythology,[49] an exploration of the Religious System of the Manichaeans,[50] an investigation into the connections between Apollonius of Tyana and Christ,[51] and research into the Christian Gnosis.[52] The application of environmental tests to the New Testament compositions he beautifully illustrated in his work on the Pastoral Epistles.

Baur had begun his analysis of the New Testament not with the gospel problems but with the Pauline epistles, where the questions are comparatively simpler. It was from a study of them that he first arrived at the conviction that a false idea of the apostolic age was generally entertained; that it could not have been the period of undisturbed harmony which it was usually considered.[53] He felt strongly that he could discover in the words of Paul, himself, traces of profound opposition and conflict waged with a Jewish party in the church, and even with apostles representing that position. He was convinced by his researches that the so-called Ebionites represented the same Judaizing spirit with which Paul had to contend. The results of his exegetical lectures on the Epistles to the Corinthians he published in the Tübinger Zeitschrift für Theologie for 1831 under the title, "Die Christupartei in der korinthischen Gemeinde, der Gegensatz

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[49]Symbolik und Mythologie; oder, die Naturreligion des Alterthums (2 vols. in 3; Stuttgart: J. B. Metzler, 1824-25).

[50]Das Manichäische Religionssystem nach den Quellen neu untersucht und entwikelt (newly printed from ed. of 1831; Göttingen: Vandenhoeck and Ruprecht, 1928).

[51]Apollonius von Tyana und Christus, oder das Verhältniss des Pythagoreismus zum Christenthum (Tübingen: L. F. Fues, 1832).

[52]Die christliche Gnosis.

[53]Dunn, op. cit., pp. 84, 85.

des paulinischen und petrinischen Christenthums in der ältesten Kirche, der Apostel Petrus in Rom."[54] Here Baur demonstrated that Paul felt the opposition of a Judaizing party in Corinth, which disputed his authority as an apostle and opposed his universal Christianity with a particularistic emphasis. He pursued the traces of the same division of parties in the post-apostolic age, down to the Clementine Homilies, and attempted to explain by its means the legends concerning Simon Magus and the episcopate of Peter in Rome.[55]

The full and unique importance of Baur's method was seen first in Die sogenannten Pastoralbriefe, which has already been discussed in detail. The results of his method as applied to the Pauline epistles and Acts he published under the title Paulus, der Apostel Jesu Christi, in 1845.[56] This work exposed his suspicions concerning the authenticity of the Acts of the Apostles, not only because of the miraculous narratives contained therein, but also because he detected a conciliatory purpose in its unhistorical portrayal of the activity of Paul. Acts he deemed irreconcilable with the Paul of the authentic correspondence; Acts designed to veil his opposition to the Petrine group. In his Die sogenannten Pastoralbriefe as in his Paulus Baur attempted to discriminate between Pauline and non-Pauline letters, finally recognizing as genuine only the Epistle to the Romans, the Epistles to the Corinthians, and the Epistle to the Galatians. Baur looked upon Paul as the first proponent of universal Christianity, in

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[54] Cited by Pfleiderer, op. cit., p. 227.

[55] Ueber den Ursprung des Episcopats in der christlichen Kirche (Tübingen: L. F. Fues, 1838).

[56] Paulus, der Apostel Jesu Christi. Sein Leben und Wirken, seine Briefe und seine Lehre (Stuttgart: Becher and Müller, 1845).

opposition to and in conflict with the elder apostles of the primitive church. In Acts he sees a source of secondary historical value, written at a time when Judaizing efforts had thrown Paulinism into the background, and an irenic tone was necessary to defend him against the attacks of these Judaizers. The third section of Baur's work presents Paul's theology as the absolute spiritual religion in opposition to heathenism and Judaism. With the appearance of this work came the assurance that Baur was prepared to apply his critical theory to the whole of the New Testament.

The work of Baur on the Fourth Gospel, first given as an essay (1844) and later incorporated in Die kanonischen Evangelien, makes full use of his scientific principle. Seeking the idea and purpose which guided the author in his peculiar presentation of the gospel history, Baur finds it to be a Christian gnosis clothed in the form of an historical account of the life of Jesus. He feels that such an account, dominated by ideal motives of a doctrinal nature, cannot really lay claim to historical truth; Baur further supports this contention by a comparison of the Johannine and synoptic gospels. The whole gospel shows a systematic unity of composition to serve the dogmatic purpose of the author, a purpose which represents a more developed form of Christian consciousness and life than was possible in the lifetime of the apostle.

While Baur's work on the Fourth Gospel may be marked as a turning point of great significance, the same cannot be said of his criticism of the three synoptic gospels. His attempt to discover a dogmatic purpose in these writings prevented him from seeing their literary relation to each other. His contention that Mark consists of extracts from Matthew and Luke, in spite of the

previous researches of Weisse and Wilke to the contrary, illustrates an exaggerated application of his newly found principle.

Baur's influence as a teacher was as powerful as his influence through the press. His devotion to his scholarly task, coupled with his apparent freedom from party spirit, imbedded itself in the minds of his students. From the first few years of his academic activity there gathered around him a large group of young men eager to prosecute further the researches which he had outlined. The work of one of his students, David F. Strauss, we have already noted in part; others of the Tübingen School will be treated in a later section of this study.

A young scholar whose works merited the attention of his contemporaries in early scientific criticism was Bruno Bauer (1809-1882). In the year following his transfer from the faculty of Berlin to that of Bonn (1839) appeared his published researches upon the Fourth Gospel (1840),[57] wherein be began his attempt at the literary solution of the problem of the life of Jesus. Bauer there posited that a speculative principle such as that which took possession of the author of the Fourth Gospel influenced the mind with such overmastering power that the separation between the actual and the historical should not be expected. In the gospel of John, written by a pupil of Philo, one must look not for history but for art. Bauer, himself an artist, recognized the Fourth Gospel as a work of art. His attitude of contrast between John and the synoptics would lead one to expect that he would find in them traces of historical accuracy, but the application of his method

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[57] Kritik der evangelischen Geschichte des Johannes, cited by Albert Schweitzer, The Quest of the Historical Jesus: A Critical Study of Its Progress from Reimarus to Wrede, trans. W. Montgomery (London: A. and C. Black, 1911), pp. 137 ff.

led to other results. Instead of a difference of kind he found only a difference of degree. His researches upon synoptic gospel history[58] proceed from the point which Strauss had explored. He accepts as proved the contention of Weisse and Wilke that Mark was the earliest gospel. These two scholars had found that the author of Mark had created the connections between sections which they regarded as historical; what was now to prevent the assumption that he had also created those sections themselves? Bauer's criticism of the Fourth Gospel led him to believe that it arose from a purely literary origin; why might he not now accept this explanation of the origin of Mark? The demonstration of this by Bauer involved proof, which he felt could be supplied, that Papias' statement concerning the "Logia" was worthless. As a distinction between John and the synoptics, Bauer would say that in the synoptics we find more primitive reflection.

In Germany, then, we find the forces which first led to scientific criticism of the New Testament. In England this type of criticism arose at a much later date, even though English industrial advance had been much more rapid and her social and political attitudes had been significantly liberalized. What were the factors which retarded scientific criticism in England?

In the first place, individuals received little united support in their scientific researches from societies or universities. British science, with its intensely individualistic nature, refused to congregate in distinct schools or institutions or to be localized in definite centers. There was in nineteenth century England no organization to collect and arrange the scattered labors of individual workmen, no general encyclopaedic

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[58] Kritik der evangelischen Geschichte der Synoptiker (2 vols.; Leipzig: Otto Wigand, 1841).

spirit to guarantee completeness and thoroughness of research.

The character of the English schools was a second factor which retarded scientific criticism. The universities held fast to their dominating idea that the true object of education was not to be confused with any special methods or schools of thought, but was expressed in the idea of a liberal education. The two great universities were careful that neither the scientific, nor the classical, nor the philosophical spirit should reign there exclusively. Thus specialized and scientific investigation in the German sense never found a place in the English system. The conservative nature of the schools expressed itself in the traditional forms of criticism which issued from the pens of English writers and teachers.

Biblical criticism had, in addition, to face the conservative influence of the English Church, which was at this time deeply affected by the evangelical reaction against rationalism. It is a significant fact, as McGiffert points out,[59] that the pietistic movement followed deism and rationalism in England, whereas it preceded it in Germany. The inherent conservatism of the English Church was thus augmented by evangelicalism in its protest against free exploration of the scriptures. How deeply ingrained this conservative reaction was may be gathered from the heresy trials which followed the publication of Essays and Reviews in 1860. In the fact of these considerations, not many writers who were dependent upon ecclesiastical livings could be expected to adopt a completely scientific method. The New Testament scholar in England could not pursue his researches within the protecting walls of a university, neither could he reveal the results of

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[59] A. C. McGiffert, Protestant Thought before Kant (New York: Charles Scribner's Sons, 1911), p. 163.

private research without braving the wrath of the church which supported him. In the light of these reasons, it is not surprising that a score of years passed after Strauss' epoch-making work before the criticism of English scholars could be called scientific.

Not until 1855, when Benjamin Jowett published his exegetical work on Thessalonians, Galatians, and Romans,[60] did the scientific principles of Ferdinand Christian Baur find their partial application in an English work. Jowett's own position was about midway between Baur's and the traditional ones as to the relation of Paul to the earlier apostles: the differences were not dogmatic but practical ones. The careful criticism of the text and the apparent freedom from dogmatic prejudice in the discussion of Pauline theology further mark the work.

Jowett had applied to this pioneer work the principles later elaborated in Essays and Reviews (1860),[61] a publication which created a sensation in England similar to that created by Strauss in the Germany of 1835. The principles enunciated by Jowett and his fellow essayists had long been current in Germany and had even been voiced in England by such men as Richard Whately and Thomas Arnold. Whately in his researches on the writings of Paul (1828)[62] and on the Kingdom of Christ (1841)[63] had found that

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[60] The Epistles of St. Paul to the Thessalonians, Galatians, and Romans, with Critical Notes and Dissertations (2 Vols.; London: John Murray, 1855).

[61] Benjamin Jowett, "On the Interpretation of Scripture," Essays and Reviews, pp. 330-433.

[62] Essays on Some of the Difficulties in the Writings of St. Paul, and in Other Parts of the New Testament (1st American ed.; New York: Protestant Episcopal Press, 1831).

[63] The Kingdom of Christ Delineated, in Two Essays on Our Lord's Account of His Person and of the Nature of His Kingdom, and on the Constitution, Powers, and Ministry of the Christian Church, as Appointed by Himself (New York: Wiley & Putnam, 1842).

not a few orthodox dogmas have no foundation in scripture, and that the Bible generally does not claim to be a lawbook for the regulation of faith and practice. Instead, scripture contains a system of practical truths, motives, and principles in a form practical for the people of the eras in which it was composed. It should be read in the light of these conditions. Thomas Arnold, who came under Whately's influence while studying at Oxford, pursued further the suggestions of his teacher. A pioneer of free theology in England, he believed that a free and clear view might be obtained by means of wide historical knowledge, and then applied to biblical interpretation and current ecclesiastical questions. His untimely death in 1842 prevented any wide application of his historical and critical principles to the Bible. His work was further prosecuted in this direction by friends and pupils.

Jowett's essay of 1860 contended, quite in the spirit of Arnold, that the Bible should be interpreted like any other book and regarded as a valuable portion of the study of history and antiquity. Scripture should be read not with the help of custom and tradition nor yet in the spirit of apology or controversy, but according to the ordinary laws of human knowledge.

The heresy trial which followed the publication of Essays and Reviews in 1860 resulted in victory for the accused essayists and their champions, the progressive wing of the Broad Church. A member of this group was Arthur P. Stanley, who himself had contributed to the progress of free and unfettered study of the Bible in England. His Sermons and Essays on the Apostolical Age (1847)[64] had applied the realistic historic method of Arnold to the history of the New Testament period in a manner quite different

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[64] Sermons and Essays on the Apostolical Age (Oxford: J. H. Parker, 1847).

from the customary exegesis. His exegetical work on Paul's letters to the Corinthians[65] followed much the same pattern as Jowett's commentary of the same year. He further developed the historic method of Arnold in his Lectures on the Jewish Church (1862), which appeared later in an American edition.[66] His theory was pre-eminently that of development, wherein gradual growth, imperfect forms, and varied degrees of revelation found a place. Stanley was so successful in veiling the results of his method beneath generalities that he escaped the scathing denunciations which were in that same period poured upon Bishop Colenso for similar views with regard to the character of the so-called books of Moses. Even Matthew Arnold felt that the biblical historian should show more consideration for the edification of his readers.

The penetration of German principles of criticism into English works may be seen in the labors of Samuel Davidson. In his introductory work of 1848-51,[67] he maintained the genuineness of all the New Testament writings, including II Peter, against the arguments of criticism. When his new work appeared in 1868 under the title An Introduction to the Study of the New Testament, it was most evident that he had taken the standpoint of the Tübingen School with little reservation.[68] His labors show little of independent value.

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[65] The Epistles of St. Paul to the Corinthians, with Critical Notes and Dissertations (London: John Murray, 1855).

[66] Lectures on the History of the Jewish Church (3 vols.; New York: Charles Scribner's Sons, 1875-82).

[67] An Introduction to the New Testament (3 vols.; London: Samuel Bagster and Sons, 1848-51).

[68] An Introduction to the Study of the New Testament (2d ed.; 2 vols.; London: Longmans, Green and Company, 1882).

The counterworks to the German critical spirit of that period may be seen in the apologetic work of Salmon and in the orthodox interpretations expressed in B. F. Westcott's Introduction to the Study of the Gospels, which passed through several editions after its appearance in 1851.[69] Westcott contended that the contents of the gospels are in complete harmony, the inessential differences in the narratives being explicable by the varied individuality of the writers. The appeal is to the emotions, the language that of devotional literature.

Thus the scientific principles of the Industrial Revolution, the liberalizing influence of the middle class social and political policy, and the growing domination of science in the intellectual world generally found their mark first in the scientific criticism of German New Testament criticism scholars. Educational and ecclesiastical factors retarded the growth of scientific New Testament criticism in England. The heavy hand of Roman Catholicism retarded French criticism still more; its late and rather sporadic results will be viewed in the next section, along with later developments in Germany and England.

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[69] Introduction to the Study of the Gospels (Boston: Gould and Lincoln, 1862).

CHAPTER V

THE PROGRESS OF EUROPEAN NEW TESTAMENT CRITICISM PRIOR TO 1900

We have seen how scientific New Testament criticism arose in harmony with the political, social, and economic currents of the times. It now remains to note the interaction between these phases of activity and the work of the New Testament critic in the latter half of the nineteenth century.

The Congress of Vienna (1815) expressed in no uncertain terms the conservative reaction against the revolutionary and more liberal tendencies demonstrated in the French Revolution and the Napoleonic era. It set as its goal the re-establishment, as far as possible, of all states and state boundaries in existence before the French disturbances. Victor nations were in slight measure rewarded for their toils in war, especially when added security was needed against the vanquished enemy, France. The Italian settlement was made with little difficulty, but the question of the various German states defied a satisfactory solution. In the end, the settlement was a bitter disappointment to the national hopes of Italy, Poland, Germany, and Belgium. Playing into the hands of the Austrian chancellor, Metternich, who feared all novelties as revolutionary, the thirty-eight sovereign German states allowed themselves to be formed into a loose association, to be called the German Bund. Although the Bund was authorized to transact business in a Diet, it proved altogether ineffectual in the face of the real power still retained by the individual

princes.[1] Thus Germany remained a mere geographical expression. That the German states should react violently against this triumphant conservatism we should expect. We turn now to analyze, in addition, the liberal movements in France and England.

Twenty days after Waterloo Louis XVIII re-entered Paris and resumed the reigns of the French government. France had been beaten but not crushed. Millions of sturdy peasants who operated as landed proprietors gave strength to the economic program of the country. Napoleon's policy of waging wars at the expense of his conquered foes and his foresight and genius in finance left the French national debt in 1815 only one-sixth as large as that of Great Britain.[2] The middle class lost no time after the return to peace; they set about to extend trade and expand business interests.[3] Louis XVIII, however, faced many disturbing factors. Although inclined to liberalize his government and lean upon the constitutional party, he was faced by the uncompromising ultra-royalists who desired to control the press and dominate the legislative functions, aiming ultimately at the overthrow of the constitution.[4] By 1820 the ultra-royalists had gained control of the ministry, and the accession of Charles X added the finishing touch to the triumph of the forces of reaction. By 1827 Charles had so offended the bourgeoisie, who constituted the bulk of the voters, that they administered a signal defeat to his ministry. A desperate attempt to enforce his will upon the nation in 1830 led to a revolution which deposed him from power and installed at the head of a constitutional monarchy the duke of Orleans, Louis

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[1] Schevill, op. cit., p. 470.

[2] Carlton J. H. Hayes, A Political and Social History of Modern Europe (New York: The Macmillan Company, 1922), II, 15.

[3] Ibid. [4] Schevill, op. cit., pp. 481 f.

Philip. The two important elements which brought about this "July Revolution" were the workingmen, in favor of a democratic republic, and the middle class, which supported a constitutional monarchy.[5]

The middle class, which was far better organized, enforced its will in the selection of Louis Philip. Although the shift from the older branch of the house of Bourbon to the younger appears on the surface to be of little importance, much deeper changes were thereby signified. Even though the old constitution remained in force, it was liberalized somewhat by slight revisions, and more particularly by the lowering of property qualifications for the franchise, a move which brought about a doubling of the number of electors. Again, Louis' accession marked a complete change in system. He was king by the grace and power of the bourgeoisie, not on the ground that he was the legitimate successor.[6]

Sustaining Louis Philip was the group which favored a constitutional monarchy, occupying the dangerous middle ground between the ardent legitimists and the equally ardent republicans. Back of many of these social and political agitations were the tremendous changes wrought by large-scale industrialization. The reign of Louis Philip saw the dawn of the modern machine age in France, with its strife between capital and labor, its factories and its tenements. These changes registered immediately in a strengthened middle class, possessed of capital and mastery over the men whom they employed. The workingmen gained steadily in numbers, so that their natural republican tendencies were easily

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[5]J. Salwyn Schapiro, Modern and Contemporary European History (Boston: Houghton Mifflin Company, 1923), p. 97.

[6]Schevill, op. cit., pp. 483 f.

augmented by socialist propaganda for state operation and control of industries. In 1848 the reign of Louis Philip came to an end by revolution, the result of a split in the middle party. The election of Louis Napoleon to head the new republic was more of a tribute to the name Napoleon than to the man selected.

The presidency of Louis Napoleon marked a gradual return of France to the principles of monarchy, so that his coup d'état and assumption of the title Napoleon III marked only the last stage of his conquest. Napoleon endeavored to hold his popularity with the lower classes, and he also directed his attention to the middle group. Recognizing the importance of factories and railways, he vigorously favored their multiplication, thus adding strength to the middle classes. Desiring to gain prestige with all classes, Napoleon embarked upon a career of intervention in foreign affairs which led to his demise at the hands of Prussia and a united Germany early in 1871. After some months of hesitancy, the French people brought into being the Third Republic.

A decade of the Republic saw its ideals gradually gain powerful ascendancy. In the light of its history it may be characterized as democratic, nationalist, anti-clerical, and bourgeois.[7] Consistently the middle classes enjoyed the favor of the electors and were able to impose their policies. Consistent encouragement of industry, with a few concessions to the demands of the workingmen, reorganization of the army, direction of primary education, and the divorce of church and state have been dominant policies. The bourgeoisie government in the last quarter of the century promoted material prosperity in every possible way; it supported public works, and threw itself enthusiastically into colonial expansion.

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[7] Ibid., p. 594.

Turning now to the Germany of 1815 we note at once the unsatisfactory conditions which followed the Congress of Vienna. The Diet of all the German states was a mere congress of ambassadors, without any real power, out of touch with the nation, and bound to inaction, for every important decision had to be passed by a two-thirds majority.[8] In addition, there was the plain fact that those decrees which did receive the required support resolved to mere recommendations, since the Diet possessed no efficient means for securing their execution.[9] The two great states, Austria and Prussia, allowed no popular participation in politics. In Bavaria, Württemberg, and Baden constitutions were granted by the rulers; here all that Germany saw of popular political activity took place. One of the few achievements of this period was the German Customs-Union, the Zollverein, begun in 1818. This gathered around Prussia, in a uniform tariff system, all the German states except Austria; a move which promoted economic unity, added power to the middle classes, and paved the way for political consolidation.[10]

The July Revolution in Paris (1830) encouraged popular uprisings of a similar nature in a number of the absolute states of North Germany, particularly Hesse-Cassel, Brunswick, Saxony, and Hanover. Quiet was obtained by inauguration of a restricted form of representative government, and the revolution failed to spread flaming discontent to the absolute states, Austria and Prussia. Not only was this revolution scattered and local, but

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[8]Henri Lichtenberger, Germany and Its Evolution in Modern Times, trans. A. M. Ludovici (London: Constable and Company, 1913), pp. 70 f.

[9]Ibid., p. 71.

[10]Schevill, The Making of Modern Germany (Chicago: A. C. McClurg and Company, 1916), pp. 110 f.

it was exclusively concerned with liberal aims. No move was made toward national unity. It marked simply an advance in constitutionalism in several of the smaller states; its strength showed the rising tide of liberalism, its weakness demonstrated the lack of a powerful middle class.

The year 1848 witnessed the advance of liberalism and the middle classes to the point where they could overthrow the controlling forces of reaction. Austria displaced Metternich, renounced absolutism, and received a constitution, a parliament, and freedom of the press. The small German states demanded and received further concessions from their rulers. The growing tide of liberalism in Prussia intimidated Frederick William IV to the point where he promised to call an elected parliament and to further the cause of German unity.[11] Leading these movements against absolutism were the educated middle classes, professors, lawyers, writers, doctors, merchants, and industrialists.[12] This revolution was thoroughly national as well as liberal.

A parliament of all Germany elected by universal manhood suffrage, assembled in May, 1848, at Frankfort-on-the-Main. Although distinguished intellectually and morally, the German parliament possessed none of the instruments for enforcing its will upon reluctant states. Faced by fading enthusiasm on the part of its supporters and split over questions of policy, it faded away into insignificance. Austria returned to its policy of absolutism, and Prussia accepted a constitution of the king's own making. Rather than surrender their sovereignty under the leadership of Prussia, the German princes once more adopted the ludicrous plan of the old Bund (1850).

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[11] Scheville, A History of Europe, p. 498.

[12] Lichtenberger, op. cit., p. 105.

The advent of William I to the throne of Prussia in 1858 was hailed by the liberals as the dawn of a new era. He immediately took two steps which contributed greatly to the strength of Prussia and her power to unite all Germany under her leadership. The first was a drastic reform of the army, the second the appointment of Bismarck as prime minister. Bismarck, although a fearless defender of the royal prerogative, was convinced of the weakness of the German Bund and of the necessity for its destruction in the interest of German unity. He therefore disregarded it in the Schleswig-Holstein crisis of 1863 and called upon Austria to assist him in demolishing Denmark. This done, he made the division of the booty the nominal issue over which he removed Austria from the German political scene in 1866. The Bund was dissolved and Prussia united the states of northern Germany under her guidance. The component states of this North German Confederation preserved a broad measure of autonomy, but their leading sovereign rights were taken over by the new federal institutions, the Bundesrath, the Reichstag, and the king of Prussia in his capacity as chief executive.[13] The South German states retained a separate status until the Franco-Prussian crisis drew them into the North German Confederation. At the victorious conclusion of this struggle, the North German Confederation welcomed the southern German states into its group, and proclaimed William I Emperor of all Germany. German unity was an accomplished fact.

The German Empire may be classified as constitutional, although it was not parliamentary in the French or British sense. The ministry was not responsible to the legislature, but to the emperor; he in turn, however, had to depend upon the Reichstag

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[13]Schevill, A History of Europe, p. 560.

for the voting of taxes and the passing of laws.[14] Although the German government retained this compromise with absolutism, that aspect was largely forgotten by the middle class in the triumph of its dream of German unity. Outstanding in the history of this empire during the last quarter of the nineteenth century was its rapid and thorough-going industrialization. Each year brought new power and numbers to the middle classes whose program was stimulated by efficient national legislation.[15] Advances were made in the matter of coinage, a national bank was established, and a national system of weights and measures instituted. Bismarck converted the country from free trade to protection (1879)[16] and took cognizance of the rising tide of socialism, which was becoming a powerful influence in the lives of the working class created by the industrial revolution.

William II, who came to the throne in 1888, immediately showed himself to be concerned primarily with the economic welfare of his people. By dismissing Bismarck from office and successively appointing men of a less authoritative nature to the chancellorship, he increased tremendously the autocratic powers of the emperor as the director of German policy. By supporting industry, commerce, and agriculture alike, he directed Germany's phenomenal rise in such matters as the merchant marine, the value of agricultural products, and foreign trade. Indicative of Germany's rise after unification was the growth in population from forty-one millions in 1870 to seventy millions in 1914.[17] William's policy of political and economic expansion signified

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[14] Ibid., p. 599. [15] Ibid., p. 600.

[16] Charles D. Hazen, Europe Since 1815 (Revised and enlarged ed.; New York: Henry Holt and Company, 1924), I, 287 ff.

[17] Schevill, A History of Europe, p. 603.

that he must lean for support upon the landowning and the middle classes. By serving the interests of these groups he gained their attachment, but he alienated the workingmen organized in the Social-democratic party. Politically powerful and dominated by the Industrial Revolution, Germany embarked upon a policy of colonial expansion which soon drew the envious glances of surrounding and competing nations.[18]

Of the great powers which crushed Napoleon at Waterloo only England had any semblance of popular participation in government. Any candid analysis of the English system in 1815 would demonstrate, however, that it conferred political rights exclusively on property-owners, especially upon owners of landed property.[19] Previous to the Industrial Revolution this condition had not appeared so anomalous, but by 1815 the new industrial class was becoming powerful enough to insist upon a voice in the halls of government. The French Revolution and the triumph of reaction after Napoleon strengthened the grip of the old system, and set its proponents more firmly than ever against change. The voice of the middle classes could not be thus stilled, however, and so pressing was their program that in 1822 there was inaugurated a modest plan of reform. England supported the revolutionary claims of Portugal and the Spanish colonies and, in addition, altered her domestic economic system by simplifying the customs tariff.[20] This constituted a notable concession to the new manufacturing interests which thrived upon open avenues of trade and cheaper foreign food.[21] Liberal opinion triumphed again in 1828 with the repeal of the Test Acts, thus giving Dissenters full civil

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[18]Hazen, op. cit., I, 303 ff.

[19]Schevill, A History of Europe, p. 567.

[20]Ibid., p. 570. [21]Ibid.

liberties and rights.[22] There followed shortly abandonment of the special laws which excluded Catholics from both houses of parliament. In 1832, on the strength of a Whig victory at the polls, there passed a bill for parliamentary reform which brought about a redistribution of seats and a more uniform electoral franchise.[23] This Reform Bill of 1832 marked the loss of supreme political power by the landed aristocracy; the middle classes, representing developing industry, were now rapidly gaining strength for the struggles over power which marked the next generation. The reorganized Liberal party became the proponent of middle class interests.

The expanding power of the middle classes reached a notable point when, by 1860, it effected the demolition of England's old mercantilist policy and a partial commitment to free trade. The powerful middle class, however, soon encountered stout opposition from the very group its factories had created, the workingmen. Once free trade had swept away the barriers to foreign exchange, the capitalists were committed to the policy of laissez-faire, even where it concerned the ruthless exploitation of workers. An early movement for universal suffrage (1837-1848) failed to secure an extension of the franchise, but the second Parliamentary Reform Bill of 1867 substantially enfranchised the unionized workers. The third Parliamentary Reform Act of 1884 brought a voice in the government to a large proportion of the agricultural laborers.

In a previous section we noted the tremendous social and economic changes wrought by the Industrial Revolution. These changes forced themselves to the forefront of political

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[22]Hazen, op. cit., I, 407 ff.

[23]Schapiro, op. cit., pp. 60 ff.

considerations. By 1833 the flagrant mistreatment of factory workers brought political interference with the freedom of contract proclaimed by the middle classes. This first Factory Act fixed a maximum working day for children and adolescents. The Mines Act of 1842 eliminated women and boys under ten years of age from underground work. These initial pieces of legislation were followed by industrial regulations of such proportions that by 1901 a new general labor code was formulated. But the workingmen were convinced of a need for a party which championed their rights against the parties of the bourgeoisie. By 1900 this group, called the Labor Party, came into being. Beginning with a moderate program, it has gradually adopted the full socialist demand of collective ownership of mines, railroads, and factories.[24]

Outstanding among the achievements of England since 1815 has been the expansion of the British Empire. Although powerful in her colonial policy of the eighteenth century, England's demonstrated superiority on the sea during the Napoleonic wars and her tremendous industrial strides enabled her to launch a nineteenth century expansion which altogether dwarfed former efforts. Urged on by commerce and industry England's colonial policy came to touch India, Canada, South Africa, Egypt, Equatorial Africa, Australia, New Zealand, as well as numerous scattered islands which served as strategic naval bases.

The latter half of the nineteenth century witnessed unprecedented industrial progress in western Europe. Lines of transport and communication wiped away old geographical boundaries, bringing commerce and industry to new heights of efficiency. In 1834 Belgium, by her vote to make railways a national undertaking,

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[24]Schevill, A History of Europe, pp. 576 f.

gave notice to the world that she intended to exploit the advantages of her position as a land of passage.[25] Beginning slowly about 1832, the French railway network was rapidly augmented under the Second Empire; the 1842 program of trunk lines was completed, together with a considerable number of subsidiary lines, and the later years of the Empire saw the modernization of trunk lines and further additions to the subsidiaries.[26] The French railway map of 1870 contained most of the main features of the map of 1900. Germany's railway program went ahead at a faster pace than any other continental network, with the sole exception of Belgium. From the first German railway in Bavaria in 1835 until 1840 little progress was made, but after that date the suspicions of the Prussian government were allayed and railroad-building began at a rapid rate. By 1860 there were 3500 miles of railway in Prussia, privately-owned but in many cases resting upon heavy government investments. The western and southern German states followed the Belgian example of state-owned railways. By 1850 the German railway system was much further advanced than the French, both in through routes and subsidiaries.[27] From 1850 to 1866 there were no important changes in railway policy, but the governments definitely encouraged the completion of central lines. Under Moltke particularly the War Staff came to see how thoroughly useful was a properly controlled railway system. The revolutionary changes wrought in Germany by the advent of the railway were much more marked than such changes in the more urbanized France or England. Where towns were small and half rural and roads particularly poor the railroads helped to effect tremendous industrial and social

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[25] Clapham, op. cit., p. 141.

[26] Ibid., p. 149. [27] Ibid., pp. 153 f.

changes.[28] In railway transportation as in industrial progress generally England reaped the first benefits. In 1824 Stephenson's locomotive ran between Stockton and Darlington; five years later the Manchester-Liverpool railway demonstrated the practicability of this means of transportation.[29] There was a small boom in railway construction in the early 'thirties, followed by a more extensive one about a decade later. This period saw the plans for most of the modern main lines, and gradual attempts by parliament to formulate a consistent policy of regulation.[30]

The electric telegraph appeared in all countries as an adjunct to the railway.[31] The apparatus invented by Morse in 1836 quickly came into widespread use; in the forties lines spread all over Europe; in the fifties cables were laid in all the narrow seas; in the sixties came the crowning success, a transatlantic cable.

1860 can well be noted as a turning point in French agriculture. Previous to that time it had been intensely traditional, marked by the predominance of manual work and resigned submission to nature.[32] Foreign competition, the use of machinery, and rising costs of production were definite factors after 1860, and each of these was definitely connected with improvements in means of transport.[33] During the last quarter of the nineteenth century France, alone among the greater western nations, retained her predominantly rural character.[34] But the rural side of her national life was losing ground, so that after 1850 the movement of population toward towns and industries became most marked.

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[28] Ibid., pp. 155 f. [29] Derry, op. cit., pp. 191 f.
[30] Ibid., pp. 192 f. [31] Clapham, op. cit., p. 157.
[32] Ibid., pp. 158 f. [33] Ibid., p. 159. [34] Ibid.

By 1906 the rural population constituted 57.9 per cent. of the total population as compared to 67.6 per cent. in 1876.[35] After the sixties nothing happened to alter materially the framework of French rural society.[36]

The revolutionary movements of 1848 marked a definite stage of German agrarian history, for in many states they set in motion real attempts to revise the inherited relations between the peasants, the lords, and the land. Until these old relations had been overhauled, the peasant was not free economically, though he might be free legally.[37] By 1871, at the inception of the German Empire, the country was largely composed of free landowning peasants and powerful cultivating squires. By 1875 the rural districts were just beginning to feel the rapid drift of population to towns and to foreign countries which was to complicate German economic problems for the next forty years.[38] Rural depopulation was assisted by the advent of modern agricultural technique. After 1850 Germany had little to learn from any country in the matter of agriculture and forestry.[39] However, this did not prevent her in the decade following 1870 from ceasing to be a food exporting country.

Between the close of the Napoleonic wars and the Poor Law reform of 1834 English rural life was markedly different from either the preceding or the succeeding ages.[40] The common lands had gone, the commoners were now wage-laborers on the land; the yeoman-farmers were disappearing under the triple pressure of rent, rates and taxes, and violent fluctuations in the value of

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[35] Ibid. [36] Ibid., p. 160.

[37] Ibid., p. 195. [38] Ibid., p. 204.

[39] Ibid., p. 206. [40] Perris, op. cit., p. 125.

their crops.[41] Few would have guessed the immanence of an agrarian crisis, so highly cultivated was the country and so high were the prices of farm products.[42] But the deliberate and systematic oppression of rural labor was exposed and denounced by the Poor Law Commission of 1834, and revolution was averted only by reform in the administration of the Poor Law and mitigation of taxes on imported corn. The Corn Laws fell completely in the face of the famine of 1846. The third quarter of the nineteenth century was marked by further improvements in farm methods. More attention was paid to the improvement of livestock, the land itself was enriched by scientific drainage and the application of new fertilizers, and there was extensive substitution of machinery for hand processes.[43] The results were an increase in the yearly yield of produce, a lowering of the cost of production, and a diminution in rural employment which drove the best stocks into industrial areas.[44] The farmers gained in most of the changes, but it was characteristic of an age when the middle classes in general were rising to a new prominence. Between 1873 and 1888, however, prosperity faded into depression. Alike in shipping, in iron and steel, and in agriculture, prices fell, and both capitalists and workers faced ruin. Only in the late years of the nineteenth century did English industry and agriculture face further advances through a vigorous colonial policy and consequent inter-Empire trade.[45]

The general outlines of French, German, and English industrial progress have been traced in the preceding chapter. Political forces delayed the creation and completion of a railway

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[41] Ibid. [42] Ibid. [43] Derry, op. cit., pp. 210 f.

[44] Ibid., p. 211. [45] Ibid., pp. 227 ff.

network. Hardly had that been completed and industrial expansion begun when the chaotic conditions following 1870 blighted the powers of the nation. Lack of fuel remained a constant handicap; even though the French coal output increased steadily in the late nineteenth century, it never became impressive. Iron production was hampered by the late installation of modern equipment and political setbacks. France lost important metallurgical centers with the cessation of Alsace and Lorraine to Germany. For twenty years after 1869, little improvement was made by post-war France on the 1,000,000 tons of wrought iron and steel turned out in that year.[46] By the beginning of the twentieth century, however, France was increasing her steel output at a greater rate than any other country.[47] The country was late and rather slow in the extensive application of steam power to industries. In most of the prominent manufactures, France was consistently behind England always, and Germany after 1871.

The efficient railway system constructed by the German states first dragged them from their economic stagnation.[48] From a position behind that of France and Belgium in the second quarter of the century, Germany pushed rapidly ahead of them in coal production during the third quarter. In the sixties and early seventies the German iron industry took a leap forward, and made rather steady progress thereafter. After 1880 Germany made noted progress in the acquisition of a steam mercantile marine. Textile industries made notable progress, although the proportion of imported raw materials mounted steadily. The chemical and electrical trades made singularly rapid development after German unification. For these the old Germany had laid a widespread foundation of

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[46]Clapham, op. cit., p. 237. [47]Ibid., p. 238.
[48]Ibid., p. 280

scientific knowledge.[49]

English industrialism made marked progress during the second quarter of the nineteenth century, in spite of the great distress which accompanied it. In that period was developed the steam locomotive, which virtually rendered man's movements independent of seasons and climates. In the second quarter progress and prosperity went hand in hand.[50] The immediate effects of repeal of the Corn Laws were only to prevent rapid fluctuations in price and to enable the growing population to obtain its food at slightly cheaper rates.[51] This was an epoch in which the railway and steamship brought about a revolution in the collection and distribution of raw materials, food, and manufactures.[52] Export trades grew by leaps and bounds: between 1850 and 1870 exports of iron, steel, machinery, and coal quadrupled. England profited tremendously from the steamship industry, both in the building of steamships and the supplying of coal. Machinery in this period came to be harnassed to new tasks: the combing process of the fine cotton manufacture, the sewing of boots and shoes, the turning of pottery, and the re-equipment of agriculture.[53] This rapid progress in all forms of industry was temporarily halted by the depression of 1874-1888, but thereafter England's manufacturers sought outlets in colonial possessions. At the close of the nineteenth century, England was still master of the European economic situation.

It was to be expected that the growing dominance of industrialism should make its power felt in other areas. In the area of legislation, the increased power both of the middle

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[49] Ibid., p. 303. [50] Deery, op. cit., p. 204.
[51] Ibid., p. 205. [52] Ibid., p. 207.
[53] Ibid., p. 210.

classes and of the workingmen exercised an ever more dominating influence. Back of the social legislation of the nineteenth century were not only the humanitarian interests of the upper classes but also the driving force of power newly found by the lower classes, creations of the Industrial Revolution. Industrialism brought ever increasing interest in and dependence upon the methods of the mechanical and natural sciences. With pervading power these methods swept through practically all areas of intellectual endeavor, removing ancient landmarks and replacing older formulations. We have noted in a previous chapter how inductive scientific method began its conquest of New Testament criticism in Germany under the influence of Ferdinand Christian Baur and David Friedrich Strauss, and much later in England under Thomas Arnold and Benjamin Jowett. In general, the principles upon which these men proceeded were as follows: (1) to treat New Testament materials precisely as one would treat other materials, exhibiting a method of criticism hampered by no prescribed results, (2) to free oneself from all prejudice, (3) not to judge traditions solely by their antiquity, (4) to judge early Christian writers and the church by the ideas and customs of the period in question, (5) to note the controlling influence of religious and dogmatic interests in the formation of these materials. It now remains to note how, in a world ever more dominated by scientific principles, New Testament criticism became increasingly scientific.

The students and followers of Baur were essentially agreed in their critical method, although from the first they differed in their critical results. The periodical of this group was the Theologische Jahrbücher, which gave most of its space to critical New Testament inquiry. The editor of this organ was Eduard Zeller, one of the early and outstanding adherents of the

"Tübingen School." Zeller's articles upon the Acts of the Apostles first appeared in the Theologische Jahrbücher and were afterwards collected in a volume (1854).[54] Zeller sees in Acts other than merely historical purposes; it is the primary aim of the writer to reconcile Paul and the Jewish elements in early Christianity. In order to accomplish this, many features of Paul known to us from other sources are omitted altogether; others are placed in a one-sided light. Acts was written primarily as a recommendation of the Apostle to the Gentiles to the "Jewish Christians."[55] In spite of its exaggerated application of Baur's theory, Zeller's work was most valuable for having brought out for inspection the problems of early Christian history.

The work of Schwegler, Das nachapostolische Zeitalter (1846),[56] representa a still more exaggerated application of Baur's view concerning the original opposition and gradual reconciliation of the primitive Christian parties. Schwegler sees in Christianity before Paul a narrow, rigidly ascetic, and legal form of Judaism, much like Essenism. As Ebionitism this group maintained a stringent opposition to the universalistic teaching of Paul and actually retained control of ecclesiastical Christianity until the time of Irenaeus. This principle determines Schwegler's estimate of all early Christian literature: those writings which seem to him un-Pauline he at once brands as "Jewish Christian," failing to perceive the possibility that there might have been gentile Christians who were not within the Pauline

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[54]Edward Zeller, The Contents and Origin of the Acts of the Apostles, trans. Joseph Dare (2 Vols.; London: Williams and Norgate, 1875-76).

[55]Ibid., II, 113.

[56]Albert Schwegler, Das nachapostolische Zeitalter in den Hauptmomenten seiner Entwicklung (2 Vols.; Tübingen: Ludwig Friedrich Fues, 1846).

tradition. Schwegler's position demonstrated the dangers inherent in the earlier formulations of Baur.

From within the Tübingen School itself came a protest against this exaggerated development. In the Theologische Jahrbücher between 1847 and 1850 appeared several essays by Planck and Köstlin, endeavoring to correct Schwegler's theory. Planck pointed out that it made Paul the true founder of the new principle, and omitted entirely any explanation of Jesus and his work as Paul must have conceived it. Planck held that in Paul there came to be developed only that which was inherent in primitive Christianity, that the reconciliation of Paul and Judaic Christianity was possible by means of an inward approximation to each other.[57]

Köstlin found in Schwegler the inability to distinguish between later extreme Ebionitism and the original apostolic Jewish Christianity. Köstlin holds the latter to have been from the first far in advance of Judaism; the Pauline contribution stimulated it to development in two directions, on the one hand to ecclesiastical unity, and on the other to heretical Ebionitism. Köstlin perceived that all gentile Christianity must not be identified with Paulinism; that certain Pauline doctrines failed to find a permanent home in the Christian tradition was not the work of Judaizers but the failure of these teachings to fulfil a felt need in the gentile communities.[58]

In 1853 appeared Ferdinand Christian Baur's work upon Christianity in the first three centuries,[59] in which he utilizes

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[57]Pfleiderer, op. cit., pp. 233 f.

[58]Ibid., pp. 234 f.

[59]Ferdinand Christian Baur, Das Christenthum und die christliche Kirche der drei ersten Jahrhunderte (Tübingen: L. F. Fues, 1853).

throughout one comprehensive work his theory of the conflict between Pauline and Jewish forms of Christianity. Each of the writings in this early period of church history is estimated on the basis of its position in this matter. (Since this critical principle has already been adequately explained in connection with his earlier works, we pass now to a consideration of additional opponents of Baur and his Tübingen School.)

The theories of Baur and Schwegler faced forceful criticisms at the hands of the opponents of the Tübingen School. Of these, Albrecht Ritschl was one of the more prominent. In the first edition of his work, Die Enstehung der altkatholischen Kirche (1850), Ritschl expressed only partial disagreement with theories of Baur and Schwegler, but in the second edition[60] he broke with them entirely. In agreement with Planck and Köstlin he held that the person of Jesus and the belief of the first apostles provided the neutral starting-point for various later parties. In opposition to the older Tübingen critics Ritschl maintained that Catholic Christianity proceeded from gentile rather than Jewish elements of early Christianity. Ritschl also perceived definite Jewish traits in Paul, balancing his pro-gentile tendencies. Ritschl's objections to identification of gentile Christianity with Paulinism and his portrayal of the Jewish elements in Paul form a strong position; his treatment of the epistles of Peter and James and his neglect of Hellenism as a factor in the evolution of early Christianity considerably weaken the force of his book.[61] He devotes little space to the Gospel of John, a fact which may indicate uncertainty as to its function.

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[60]Albrecht Ritschl, Die Enstehung der altkatholischen Kirche (2d ed.; Bonn: Adolph Mareus, 1857).

[61]Pfleiderer, op. cit., p. 236.

In a series of critical works upon the various New Testament compositions,[62] Heinrich Meyer disputes the sharp antithesis which the Tübingen theory draws between Paul and the original apostles. He challenges Baur's right to determine the position of New Testament writings by means of their supposed dogmatic or ecclesiastical "tendency." Practically the same objections are offered by Lechler in his work upon apostolic and post-apostolic times.[63] He affirms, against the position of Baur and Schwegler, that Luke and Acts are primarily history, and he purports to find in the authentic letters of Paul confirmation for many of the positions taken by the author of Acts.[64] Lechler admits no great differences in principle between Paul and the early apostles; he sees only one spirit though there are many gifts.[65] He holds that Paul's Judaistic antagonists represented an extremist party and are not to be confused with the apostles themselves.[66]

Bleek, in his researches upon synoptic relations[67] and his work of introduction to the New Testament,[68] reaffirms most of the older positions of New Testament criticism. Lacking any controlling principle or standard of judgment, he attacks the problems of the individual writings in atomistic fashion, giving

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[62]Heinrich August Wilhelm Meyer, Kritisch exegetischer Kommentar uber das Neue Testament (16 pts.; Göttingen: Vandenhoeck und Ruprecht, 1832-1873).

[63]Gotthard Victor Lechler, Das apostolische und das nachapostolische Zeitalter mit Rücksicht auf Unterschied und Einheit in Lehre und Leben (2d ed.; Stuttgart: Rudolf Besser, 1857).

[64]Ibid., pp. 10 ff. [65]Ibid., pp. 232 ff.

[66]Ibid., pp. 379 ff.

[67]Friedrich Bleek, Beiträge zur Evangelien-Kritik (Berlin: G. Reimer, 1846).

[68]Bleek, Einleitung in das Neue Testament (Berlin: G. Reimer, 1862).

no worthwhile picture of their place in developing Christianity. He argues that the composition of Mark followed and depended upon both Matthew and Luke, that the Fourth Gospel was composed as actual history, and that Luke and Acts were written for readers who desired accurate information on the beginnings of the Christian movement.

Another opponent of the Tübingen writers who formulated no consistent principle for his own use was Bernhard Weiss. In his work upon the teachings of I Peter[69] he affirms the apostolic authorship of the epistle, contends that it was written before the time of Paul, and resolves to his own satisfaction any appearances of conflict between Petrine and Pauline teachings. Weiss' work upon the Johannine doctrines[70] touches upon few of the critical problems involved in the Fourth Gospel. However, in his studies on the theology of the New Testament[71] and more particularly in his introductory work[72] Weiss affirms apostolic authorship for the Fourth Gospel, limiting the historical value to a minimum of recollections; in addition, he allows the Pauline authorship of the Pastorals, although his treatment of Paul generally shows some concessions to the Tübingen principles.

The work of Reuss shares the characteristics of many of

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[69]Bernhard Weiss, Der Petrinische Lehrbegriff (Berlin: Wilhelm Schultze, 1855).

[70]Weiss, Der Johanneische Lehrbegriff (Berlin: Wilhelm Hertz, 1862).

[71]Weiss, Lehrbuch der biblischen Theologie des Neuen Testaments (2d ed.; Berlin: Wilhelm Hertz, 1873).

[72]Weiss, Lehrbuch der Einleitung in das Neue Testament (Berlin: Wilhelm Hertz, 1886).

the opponents of the Tübingen writers. In his history of the canon[73] and his treatment of theology in the apostolic age[74] the author offers valuable criticisms of too strict adherence to Baur's theory of the sharp antithesis between Paul and the early apostles, but his own reconstructions lack a controlling principle. They fail to picture accurately any situation in which the writings under consideration could have arisen. Reuss, too, thinks of Paul's opponents as extreme Judaizers rather than the apostles themselves. The destruction of Jerusalem, he believes, must have severed the bond between converted Jews and their Temple worship; therefore, it is improbable that controversy between Jews and Paulinists should have continued into the second century.

In his comprehensive labors upon the history of Israel,[75] Ewald follows largely the traditional outlook on the authenticity and historical reliability of early Christian sources. Luke-Acts he receives as of primary importance in his portrayal of the apostolic period; in practice he rejects principles of judgment exercised upon it by more scientific scholars. This acceptance of New Testament sources with few principles of criticism accords with his belief that Christianity represents the crowning achievement of Judaism. In his earlier work upon the letters of Paul,[76] Ewald had set forth more in detail his objections to the Tübingen theory.

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[73]Eduard Reuss, Die Geschichte der heiligen Schriften Neuen Testaments (3d ed.; Braunschweig: C. A. Schwetschke und Sohn, 1860).

[74]Reuss, History of Christian Theology in the Apostolic Age, trans. Annie Harwood (2 vols.; London: Hodder and Stoughton, 1872-74).

[75]Heinrich Ewald, Geschichte des Volkes Israel, Vols. V-VII (2d ed.; Göttingen: Dieterich, 1857-59).

[76]Ewald, Die Sendschreiben des Apostels Paulus übersezt und erklärt (Göttingen: Dieterich, 1857).

The later work of Karl von Hase in attempting to construct a story of Jesus from the gospel sources[77] marks gradual concessions to more scientific criticism. His dependence upon the details of the synoptics is more wary than in his earlier works, and he uses the Fourth Gospel in the light of the theory that it was written by a disciple of John, not by the apostle himself.

These critics and opponents of the Tübingen School were generally agreed in their conclusions, if not in their methods. They disputed the antithesis between Paul and the original apostles drawn by Baur's theory. Although they admitted a certain difference in tendency, they viewed the parties as mutually supplementary rather than mutually exclusive. Paul's opponents were not to be confused with the original apostles; his antagonists were extreme Judaists. Further, these writers contended that Baur's Tendenz criticism rested upon the unproved supposition that strife between Judaists and Paulinists (or gentile Christians) continued far into the second century. In many cases the authors above were motivated by an apologetic desire to save the traditional authorship of the biblical writings; in so doing, they sometimes fell into uncritical methods of procedure, reclaiming as Pauline even the pastoral epistles. But the tendency of the times was against so eclectic a type of criticism. The scientific method forced concessions toward more inductive treatment, and in Hase, Reuss, and Weiss could be seen the beginnings of a movement toward the type of procedure represented by the Tübingen scholars. In exegesis noticeably a uniform method of

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[77]Karl von Hase, Geschichte Jesu (2d ed.; Leipzig: Breitkopf und Härtel, 1891).

philological objectivity and exactness had been increasingly cultivated.[78]

There arose from within the ranks of Baur's followers ready champions of the right of scientific criticism. Adolf Hilgenfeld's labors show essential agreement with the critical principles enunciated by Baur, although he denominates his method Literarkritik as compared to Baur's Tendenzkritik. His work on the Fourth Gospel[79] is a further development of Baur's position; Hilgenfeld, however, feels that the work was composed in a circle under the complete domination of Gnostic ideas with no intention to convey an historical account. His view of the synoptics coincides with that of Baur, except that he places Mark between Matthew and Luke in time of composition.[80] Hilgenfeld retains the principle of antithesis between Paul and the original apostles for judgment of things Pauline and un-Pauline, but he finds in Philippians and I Thessalonians definite indications of genuineness.[81] Galatians he sees as a record of the early and bitter conflicts between Paul and his apostolic enemies.[82] In his treatment of this Pauline letter, Hilgenfeld pictures its historical situation and demonstrates how its historical and dogmatic contents fit best into a situation of Paul's conflict with Judaistic

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[78]Pfleiderer, op. cit., pp. 238 f.

[79]Adolf Hilgenfeld, Das Evangelium und die Briefe Johannis, nach ihrem Lehrbegriff dargestellt (Halle: C. A. Schwetschke und Sohn, 1849).

[80]Hilgenfeld, Das Markus-Evangelium (Leipzig: Breitkopf und Härtel, 1850); Die Evangelien (Leipzig: S. Hirzel, 1854).

[81]Hilgenfeld, Historisch-kritische Einleitung in das Neue Testament (Leipzig: L. F. Fues, 1875).

[82]Hilgenfeld, Der Galaterbrief, übersetzt, in seinen geschichtlichen Beziehungen untersucht und erklärt (Leipzig: Breitkopf und Härtel, 1852).

extremists. In his studies of the environment of early Christianity, Hilgenfeld devoted particular attention to Jewish apocalyptic works[83] and to the heresies of the early period.[84] These labors gave him a broader understanding of the conditions in which the Christian movement arose, and a basis for locating the individual writings in their historical setting.

Another member of the Tübingen group and a proponent of scientific criticism was Gustav Volkmar, whose work upon the synoptic gospels[85] brought him to the conclusions announced much earlier by Weisse and Wilke, namely, that Mark was the earliest of our canonical gospels. In this work he supported the position that first Luke and then Matthew were composed, using Mark as a guide in matters of order and generally in diction. Volkmar pressed on, however, to posit that Mark composed his gospel as a story to illustrate Pauline concepts. While this theory immediately removed the gospels from the realm of the historical, Volkmar later made an attempt to separate history from fiction in the gospels and to reconstruct a story of Jesus and his times.[86] His attempt to reconstruct the life of Paul from Damascus to the composition of Galatians[87] involved a critique of Acts as a source for Paul's life. He concludes, with some reliance upon the method

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[83]Hilgenfeld, Die jüdische Apokalyptik in ihrer geschichtlichen Entwickelung (Jena: Friedrich Mauke, 1857).

[84]Hilgenfeld, Die Ketzergeschichte des Urchristenthums, urkundlich dargestellt (Leipzig: L. F. Fues, 1884).

[85]Gustav Volkmar, Die Evangelien oder Marcus und die Synopsis der kanonischen und ausserkanonischen Evangelien nach dem ältesten Text mit historisch-exegetischem Commentar (Leipzig: Fues, 1870).

[86]Volkmar, Jesus Nazarenus und die erste christliche Zeit, mit den beiden ersten Erzählern (Zürich: Caesar Schmidt, 1882).

[87]Volkmar, Paulus von Damascus bis zum Galaterbrief (Zurich: Schröter und Meyer, 1887).

of Baur, that Acts was not primarily historical in aim, and could therefore be used only with care. On the whole, the method of Volkmar's research may be pronounced scientific, although his source-criticism was not always sound or penetrating.

Strictly in the line of Tübingen critics was Carl Holsten, whose works upon Paul and Pauline theology[88] displayed penetrating insight, but contributed little new in an understanding of the historical situations of early Christian beginnings.

On the question of the synoptics, H. J. Holtzmann advanced the theory which was for a long time to hold the field.[89] He maintained the priority of Mark; next came Matthew, following Mark and a collection of sayings; and third, using both Mark and Matthew, Luke composed his gospel. Able in their scientific criticism and exegesis were Holtzmann's contributions on the Epistles to the Ephesians and Colossians,[90] on the Pastorals,[91] and on the writings which bear the Johannine title.[92] His comprehensive manuals of Introduction[93] and of New Testament Theology[94]

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[88]Carl Holsten, Zum Evangelium des Paulus und des Petrus (Rostock: Stiller, 1868); Das Evangelium des Paulus (2 vols.; Berlin: G. Reimer, 1880-98).

[89]H. J. Holtzmann, Die synoptischen Evangelien, ihr Ursprung und geschichtlicher Charakter (Leipzig: W. Engelmann, 1863).

[90]Holtzmann, Kritik der Epheser-und Kolosserbriefe auf Grund einer Analyse ihres Verwandtschaftsverhältnisses (Leipzig: W. Engelmann, 1872).

[91]Holtzmann, Die Pastoralbriefe, kritisch und exegetisch behandelt (Leipzig: W. Engelmann, 1880).

[92]Holtzmann, Evangelium, Briefe und Offenbarung des Johannes, Vol. IV of Hand-Commentar zum Neuen Testament, ed. H. J. Holtzmann and others (4 vols. 1st ed.; Freiburg: J. C. B. Mohr, 1891).

[93]Holtzmann, Lehrbuch der historisch-kritischen Einleitung in das Neue Testament (2d ed.; Freiburg: J. C. B. Mohr, 1886).

[94]Holtzmann, Lehrbuch der neutestamentlichen Theologie (2 vols.; Freiburg, J. C. B. Mohr, 1897).

represented excellent surveys of contemporary positions as to environment, authors, purposes, and dogmatic contents of the individual New Testament compositions. Although not a creative New Testament scholar, Holtzmann's work shows emphasis upon a wide control of data and rigid application of inductive principles to the problems at hand.

Hausrath took upon himself the task of constructing the entire picture of New Testament times.[95] He related the development of early Christianity to the history of its time, showing the connections between the new movement and the condition of the Graeco-Roman world. Particularly interesting are his discussions of religious life in the Roman Empire and of the place of Judaism in that scheme. His book makes a notable contribution to the task of portraying the evolution of early Christianity in the Mediterranean world. His volumes are constructed upon the scientific researches of previous scholars.

Early in the seventh decade of the nineteenth century the interest of many scholars was shifted away from literary questions of detail to the perennially interesting subject which had first brought scientific criticism into prominence, the life of Jesus. In 1863 appeared Renan's Life of Jesus[96] and a year later Strauss' new biography of Jesus intended for the German people[97] came from the press. Renan's book was one of the few French biblical productions to attract the attention of scientific scholarship. The value of the production was not in the realm of scientific method,

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[95]A. Hausrath, Neutestamenliche Zeitgeschichte (4 vols., 2d ed.; Heidelberg: Fr. Basserman, 1875-79).

[96]Ernst Renan, Vie de Jesus (6th ed.; Paris: Michael Levy Freres, 1863).

[97]David F. Strauss, Das Leben Jesu für das deutsche Volk (Leipzig: F. A. Brockhaus, 1864).

but in highly dramatic and even imaginative forces which caused it to be widely read as a "religious epic." Its emphasis was away from the theological Christ to the lovable and living Jesus. Brilliant in its style and its imaginative reconstructions where sources were lacking it rode a tidal wave of popular support, and evoked from biblical critics who were interested in a scientific reconstruction of the historical Jesus renewed efforts to produce a work historically sound and emotionally attractive.

No scholar labored harder to produce this combination than did Strauss. Recalling the criticisms hurled at his Leben Jesu of 1835, he set about to rectify earlier mistakes and at the same time to provide for the educated people of Germany a thoroughly readable and satisfying volume. In his source criticism, Strauss adhered rather strictly to the views of Baur. He posits at the outset that there is nothing supernatural, nothing of infallible authority in the life of Jesus. It is the task of the scientific critic, in setting up positive correlatives to this negative result, to sum up what in the present position of research must be considered probable.[98] In his outline of the historical life of Jesus, Strauss presents an account which is scanty and prosaic as compared with Renan's poetical reconstructions, but lends more of the feeling that in Strauss one deals with an historical personage rather than an imaginative hero. He is extremely careful as he weighs the sources in an effort to determine the elements in the religious consciousness of Jesus. In his second section, which deals with the mythical history of Jesus, Strauss attempts to trace genetically the rise of the supernatural elements. The first effect of the life and character of Jesus was to inspire belief in his resurrection; this led to recollections

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[98] Pfleiderer, op. cit., p. 243.

of his life which surrounded each event with a supernatural halo. Reflection brought increased supernatural coloring. Thus the unhistorical was based upon the historical. Strauss' contributions to scientific method lay in a keen balancing of accounts as he attempted to separate historical from unhistorical and in a reasonable theory for the genesis of mythical elements.

From the volumes of literature inspired by the works of Renan and Strauss, only a few can be mentioned in this connection. Much of it was thoroughly unscientific, representing an apologetic interest in restoring all that criticism had removed as unhistorical. Schenkel's portrait of Jesus[99] was of a very conservative stripe, although it purported to be based upon adequate source criticism. Maintaining the priority of Mark and disclaiming apostolic authorship for the Fourth Gospel, Schenkel yet uses all the gospels as though they were of equal value, and fails to take into account their individual peculiarities. Schenkel's life of Christ is built upon artificial harmonizing and arbitrary interpretation.

The work of Theodor Keim upon the historical problems involved in constructing a life of Jesus[100] is distinguished for its investigation of sources and its storehouse of information. In his judgment of authorities, however, Keim falls into some rather poor positions. His statements on the Fourth Gospel agree largely with the position of Strauss as to its unhistorical character. On the synoptic question, however, he is agreed with the position of

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[99]Daniel Schenkel, Das Charakterbild Jesu (3d ed.; Weisbaden: C. W. Kreidel, 1864).

[100]Theodor Keim, Der geschichtliche Christus (2d ed.; Zürich: Orell, Füssli und Comp., 1865); The History of Jesus of Nazara, trans. Arthur Ransom (6 vols.; London: Williams and Norgate, 1873-83).

Baur that Matthew is the primary gospel. Upon this foundation he constructs his life of Jesus, although at frequent intervals he shows preference for Mark or Luke over Matthew. Keim seems unaware of the influences of the gospel-making period upon the contents of the writings or of the personal prejudices of the editors. At the close of his work Keim deserts history entirely in favor of imaginative reconstruction. Altogether, his work lacks the incisiveness to satisfy rigorous historical inquiry.

Carl Weizsäcker's researches upon the sources for a life of Jesus[101] reveal painstaking study and careful conclusions. He is convinced that the synoptics are based on common early gospel or basic writing; Mark follows this most closely, Matthew and Luke use this in connection with another source, a collection of sayings. Matthew's report of this second source is closer to the original than is Luke's. With regard to the Fourth Gospel, Weizsäcker shows reluctance to abandon the contention for historical accuracy. He feels that it not only portrays great theological ideas, but that it demonstrates in places strict adherence to history. This combination of the ideal with the historical was produced by a disciple of John the Apostle toward the close of the first century; its historical data rest upon the reflections and recollections of the aged John. This position on the Johannine question represents some concessions to the Tübingen contentions, although it shows a marked desire to make historical the ideal Christ pictured by the Fourth Gospel. Incisive also in its judgments of data is Weizsäcker's volume upon the apostolic

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[101] Carl Weizsäcker, Untersuchungen über die evangelische Geschichte, ihre Quellen und den Gang ihrer Entwicklung (Gotha: Rud. Besser, 1864).

age.[102] He attributes the beginning of the Christian movement to the subjective, visionary experiences of the disciples. His judgments of Paul and his work are formed almost entirely from the genuine Pauline letters; minute comparisons are made between parallel accounts in Acts and the letters. In his view as to the purpose and generally unhistorical character of Acts, Weizsäcker is on many points essentially agreed with Baur. In general, it may be said that this work represents a comprehensive knowledge of facts and thorough critique of sources.

The writings of Otto Pfleiderer demonstrate a noticeable modification of the older Tübingen hypothesis. In his investigations of Paul and Paulinism[103] and of the history of early Christianity in general,[104] this student of Baur's denies that the gradual development of the Catholic Church can be viewed as a lengthened struggle and gradual reconciliation between Paulinism and "Jewish Christianity." He likewise opposes Ritschl's theory that the church of the second and third centuries represented degeneration from the teachings both of Paul and the early apostles. Instead, Pfleiderer sees the early church as a natural development from the "Christian Hellenism" of Paul, who was the first to frame the early messages of Christian preachers into definitely Hellenistic terms. Pfleiderer recognizes in Acts a definitely secondary source for the period which it portrays, since it

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[102] Weizsäcker, Das apostolische Zeitalter der christlichen Kirche (2d ed.; Freiburg: J. C. B. Mohr, 1892).

[103] Otto Pfleiderer, Der Paulinismus, ein Beitrag zur Geschichte der urchristlichen Theologie (2d ed.; Leipzig: O. R. Reisland, 1890); The Influence of the Apostle Paul on the Development of Christianity (New York: Charles Scribner's Sons, 1885).

[104] Pfleiderer, Das Urchristentum, seine Schriften und Lehren, in geschichtlichem Zusammenhang (Berlin: G. Reimer, 1887).

reflects a much more harmonious concept of the early days than do the first-hand letters of Paul himself. Acts is the product of a later period of harmony. Pfleiderer falls into the error of placing Pauline teachings and activity too near the center of developing Christianity, but his corrective emphasis away from the continued conflict pictured by Baur was most wholesome.

The early work of Johannes Weiss shows the conservative influence of his father, with whom he collaborated in commentaries in the Meyer series. Their exposition of Mark and Luke[105] represents no essential advance in gospel criticism. The commentary on the Pastorals[106] was hardly abreast of the leading thought of the time, for it maintained still the Pauline authorship of all essential portions. Johannes Weiss' own work upon the character of the Acts of the Apostles[107] sets forth convincingly the intimate relations in structure and purpose between Luke and Acts. Weiss notes the variety of purposes which actuate the writer, of which historical accuracy is not the most important; the apologetic motive can be seen throughout the two-volume work. His investigation of Jesus' preaching on the Kingdom of God[108] reveals careful analysis of antecedents and background, particularly with regard to the eschatological nature of Jesus' teaching, but nothing of great importance in the solution of the synoptic problem.

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[105]Bernhard Weiss and Johannes Weiss, Die Evangelien des Markus und Lukas, 8th ed.; "Meyer Kritisch-exegetischer Kommentar über das neue Testament," Part I, 2d Half; Göttingen: Vandenhoeck und Ruprecht, 1892).

[106]B. Weiss and J. Weiss, Die Briefe Pauli an Timotheus und Titus, 6th ed.; "Meyer Kritisch-exegetischer Kommentar über das neue Testament," Part XI; Göttingen: Vandenhoeck und Ruprecht, 1894).

[107]J. Weiss, Ueber die Absicht und den literarischen Charakter der Apostelgeschichte (Gottingen: Vandenhoeck und Ruprecht, 1897).

[108]J. Weiss, Die Predigt Jesu vom Reiche Gottes (2d ed.; Göttingen: Vandenhoeck und Ruprecht, 1900).

Toward the close of the century, works by Paul Wernle and Adolf Harnack stated the outlook of the scientific historian toward the beginnings of the church. Wernle's early treatise on a phase of Paul's theology[109] showed a careful critique of sources and a lively sense of the importance of environment in the modification of dogmatic propaganda. His work on the synoptic gospels[110] was distinguished for its exposition of literary relationships, although it failed to provide any connected story of the conditions which the individual writings arose to meet. The early researches of Harnack were concerned with the progress of Christian thought and life under the varied influence of its environment. His treatment of the Didache[111] voiced his belief that this early Christian document was derived from an older Jewish one. His monumental work on early Christian literature[112] showed a clear approach to the various compositions, and demonstrated the possibility of fitting them into definite historical situations. His work on the status of the New Testament about the year 200[113] demonstrated the clear effects of historical events upon canonization. Harnack's interest in the "essence" of Christianity may be seen in two treatises upon the relation of Christianity to the outworking of historical events.[114] Harnack's

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[109]Paul Wernle, Der Christ und die Sünde bei Paulus (Freiburg: J. C. B. Mohr, 1897).

[110]Wernle, Die synoptische Frage (Freiburg: J. C. B. Mohr, 1899).

[111]Adolf Harnack, Die Apostellehre und die jüdischen beiden Wege (Leipzig: J. C. Hinrichs, 1886).

[112]Harnack, Geschichte der altchristlichen Literatur bis Eusebius, Part I (Leipzig: J. C. Hinrichs, 1893).

[113]Harnack, Das Neue Testament um das Jahr 200 (Freiburg: J. C. B. Mohr, 1889).

[114]Harnack, Das Christentum und die Geschichte (Leipzig: J. C. Hinrichs, 1896); Das Wesen des Christentums (Leipzig: J. C. Hinrichs, 1900).

work may be considered representative of the use of scientific method in New Testament study about the year 1900.

We have already noted in a previous chapter how scientific principles of New Testament study first employed in Germany by Baur and his group were introduced almost two decades later by the more conservative English scholars. Against stout opposition these principles were advanced into every area of biblical research. In the seventh decade of the nineteenth century, when works on the life of Christ were springing up on every hand, there appeared in England a pendant to the various continental efforts in this direction.[115] Although Ecce Homo bears the name of no author, it is commonly attributed to Professor James Seeley. In method and effect it is strangely like Renan's Vie de Jesus. Although not based upon a critical analysis of the gospel records, its straightforward presentation of Jesus as a scintillating personality who lived a life of morality above the heathen and Jewish legality or philosophy left a profound perception of his peculiar greatness and originality. The production was not scientific; it used uncritically the Johannine and the synoptic stories alike; its impression was rather of artificial composition than of real historical truth. Its picture of the moral personality of Jesus produced a deep impression upon the English mind, however, and promoted the cause of more unfettered religious thought in Great Britain.[116] From the pen of the same writer later issued an attempt to soften the apparent conflicts between science and religious thinking.[117] The solution he would find in a natural religion.

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[115] Ecce Homo: A Survey of the Life and Work of Jesus Christ (London: Macmillan and Co., 1866).

[116] Pfleiderer, Development of Theology, p. 392.

[117] Natural Religion (Boston: Roberts Brothers, 1882).

Likewise unscientific in the use of sources for the life of Jesus were the productions of Alfred Edersheim.[118] His reconstruction of Jesus' life and teachings is built upon a simple harmonization of the four gospels, with a decidedly apologetic purpose, and with no concessions to the important objections of historical criticism. The scientific contribution of his works lay in their wealth of materials on Jewish life and beliefs in the time of Jesus. His researches served to paint a reliable picture of the environment in which early Christianity flourished. Edersheim furnishes rather copious references to Jewish parallels throughout his story of Jesus' life, materials which were later used by other scholars in discerning literary origins.

From the pen of an anonymous writer there proceeded in 1874 a critical work upon Supernatural Religion.[119] The tremendous popularity of this book attested to the widespread interest in the application of scientific principles to church doctrines and writings. It was the intention of this anonymous writer, with a scientifically trained intellect and extensive historical learning, to upset the view that Christianity transcended human reason and was based upon miracles. Appealing largely to epistemological considerations and analogies from experience, he demonstrated the untenability of belief in miracles in general. Citing the immutability of the order of nature and the unreliability of human observation and testimony, he next submitted to detailed examination the biblical attestations of miracles.

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[118] Alfred Edersheim, The Life and Times of Jesus the Messiah (2 vols., 8d. ed.; New York: A. D. F. Randolph and Co., 1884); Prophecy and History in Relation to the Messiah (New York: A. D. F. Randolph and Co., 1885).

[119] Supernatural Religion: An Inquiry into the Reality of Divine Revelation (2 vols., 4th ed.; London: Longmans, Green, and Co., 1874).

Reasoning from the far-removed authorship of the canonical gospels and the conditions under which the traditions were preserved, he concluded that they were without evidential value with regard to the miracles they recorded. This external denial of their historical character he found was supported by the internal character of the gospel accounts themselves; frequent contradictions are evident between the synoptics, and to harmonize them with the Fourth Gospel would be impossible. The author found in Acts a legendary composition of a late date, not to be regarded as historical in character; therefore, its miracles could be discounted. Analyzing the accounts of the resurrection given by Paul, the writer found them to be based upon hearsay, to be in disagreement with all gospel accounts, and to be recorded by a man of highly emotional temperament, subject in all probability to frequent visionary experiences. Thus the proof of the resurrection and the ascension rests upon insufficient basis. This detailed analysis of accounts the author felt had confirmed the view of the improbability of miracles formed upon general grounds.

The value of this book lies in its keen inquiry into the historical grounds of Christianity and its analysis of sources. Like the first work of Strauss, its weakness lay in its purely negative approach, its failure to account for the rise of the dogma or miracle story in terms of the environmental needs which it must have met. It fails to describe the basis for the supernatural, or the truths which the stories must have represented for the legend-makers. Altogether, however, it met an urgent need felt by the English reading-public, for it made clear the problems which a scientific approach to Christian origins involved. The disposition of these problems was left to later scholars.

Representative of the conservative answers to Supernatural Religion was the reply of Joseph Barber Lightfoot, issued in a series of essays in 1889.[120] Instead of meeting the negative criticisms of his opponent by an exposition of the positive position of Christianity in the course of history, Lightfoot merely challenged his use of the Apostolic Fathers in their references to the origins of the gospels. It was to be expected that the author of Supernatural Religion should counter with the assertion that his historical positions were not upset, and that he should reaffirm his general conclusions.[121] The other works of Bishop Lightfoot exhibit a prevailing tendency toward harmonization of source materials. His Dissertations on the Apostolic Age,[122] comprising reprinted sections from his various commentaries on Pauline epistles,[123] although addressing themselves directly to the letters, yet lean heavily upon the Acts for factual support. Thus the work of Lightfoot, although it provides a measure of environmental study, fails to provide a satisfactory standard upon which Christian origins may be explored.

Two volumes from the pen of Matthew Arnold[124] attest to the widespread feeling of uncertainty about the biblical records

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[120]J. B. Lightfoot, Essays on the Work Entitled Supernatural Religion (London: Macmillan and Co., 1889).

[121]A Reply to Dr. Lightfoot's Essays (London: Longmans, Green, and Co., 1889).

[122]Lightfoot, Dissertations on the Apostolic Age (London: Macmillan and Co., 1892).

[123]Lightfoot, Saint Paul's Epistles to the Colossians and to Philemon (9th ed.; London: Macmillan and Co., 1890); Saint Paul's Epistle to the Galatians (2d ed.; London: Macmillan and Co., 1866); St. Paul's Epistle to the Philippians (2d ed.; London: Macmillan and Co.; 1869).

[124]Matthew Arnold, Literature and Dogma (Boston: James R. Osgood and Company, 1873); God and the Bible (Boston: James R. Osgood and Company, 1876).

and the effects which scientific discovery and method might register upon them. Written upon every page of Arnold's works is the feeling that diffusion of scientific principles necessitates a new explanation of the scriptures, so that it may again have value for readers. Arnold's own interpretation veers away from the miraculous toward a reasonable religion; he is confident that biblical records can be explained and understood in the light of the circumstances under which they arose. The outward aspects of miracle and ancient terminology must be considered in the light of the truth they were intended to convey. Arnold attempts no detailed criticism of biblical records; his quotations exhibit an effort to determine the meaning of the writer rather than to assess historical accuracy. The value of these well-written compositions is to deter the reader from severing an ancient book from its environment, a scientifically sound warning. The general nature of Arnold's works probably did more to diffuse the essentials of a scientific method among the reading public than a more detailed work could have effected.

Late in the nineteenth century there appeared two works by Edwin Hatch, each characterized by a genuinely scientific method, a thorough criticism of authorities, and an appreciative insight into the conditions and causes of historical development. In the opening lecture of his volume, The Organization of the Early Christian Churches,[125] the author presents the historical method which should characterize the study before him. He takes it as a preliminary assumption that the facts of ecclesiastical history do not differ in kind from facts of civil history. The first step in this research is to test the documents which contain the

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[125]Edwin Hatch, The Organization of the Early Christian Churches (Oxford: Rivingtons, 1881).

evidence, noting carefully distinctions of time and of locality. With these two preliminary steps completed, one must compare these facts with other facts with a view to ascertaining their causes. Two principles are used in this comparison: (1) any given group of facts has to be compared with preceding and succeeding facts of the same kind, with the view of finding out the law of their sequence, and (2) any given group of facts has to be compared with the sum of contemporary facts, with the view of finding out resemblances, and then proceeding to the inquiry how far similar facts are the result of the same causes. Hatch then meets the following objections to his method: (1) such a comparison will not hold because the phenomena of Christian history are unique, and (2) such an explanation of the phenomena of Christian history is inconsistent with a belief in their divine origin.[126] After this exposition of his method Hatch proceeds to apply it rigorously to a consideration of bishops and deacons, presbyters, clergy and laity, and other phases of organization within the scope of his work. The same careful and scientific procedure marks his later work, The Influence of Greek Ideas and Usages upon the Christian Church.[127] This treatment shows appreciative understanding of the currents of education, exegesis, rhetoric, philosophy, ethics, and theology in the Hellenistic world which nurtured the early church. Adhering strictly to the scientific method which he expounded, he was enabled to form a useful and essentially correct picture of the interplay of culture currents in the Mediterranean world.

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[126] Ibid., pp. 1-25.

[127] Hatch, The Influence of Greek Ideas and Usages upon the Christian Church, ed. A. M. Fairbairn (2d ed.; London: Williams and Norgate, 1891).

Thus, we have noted in Germany and in England the progress of scientific New Testament criticism. In both countries it closely parallelled definite economic, social, and political tendencies. It appeared first in the Germany of 1835, under the inspiration of the broad university system and the scientific principles of investigation which were fostered there. We have already noted at length the power displayed by the Industrial Revolution in spreading the methods of the natural and mechanical sciences, with the predictable result that they would first find application to scriptural documents under the favorable conditions of the German university system. It was the Industrial Revolution which brought power to the middle classes, and enabled men to break away from traditional social and political arrangements, with the result too that men could challenge the documents, ideas, and scriptures which supported the traditions. The story of Germany after 1850 is the story of increasing industrial application, of more liberal political and social institutions, and of wider application of the scientific principles of industry to every phase of learning. Even after 1850, however, the scientific principles of Baur and his followers encountered opposition from more conservative critics not yet dominated by scientific criteria. The tremendous rush toward thorough industrialization after 1871 was accompanied by a similar pervasion of New Testament criticism by scientific principles, until the last decades of the century saw important concessions to scientific investigation made even by such conservative scholars as Bernhard Weiss, Karl von Hase, and Theodor Keim. In full agreement with the trend of the period were the scientific investigations of Weizsäcker, Pfleiderer, Wernle, and Harnack. Many of the details of their labors would today be judged incorrect, but their adherence to controlling

scientific principles and their efforts to reconstruct a reliable picture of early Christianity as a whole warrant the judgment that they were essentially true to the methods employed in the natural and more exact sciences.

The influences which stifled criticism in France and retarded it in England in the earlier period continued throughout the second half of the nineteenth century, although their power was somewhat lessened in the latter country. As in Germany, the tremendously augmented industrial program of the English became an increasingly powerful factor in every phase of life, liberalizing political and social institutions, and spreading both the products and the methods of science into ever new areas. That the spread of scientific ideas had pervaded the realm of religious thinking is witnessed by the tremendous sale of books such as Ecce Homo, Supernatural Religion, and Literature and Dogma, works which explained the impact of scientific considerations upon scriptures or attempted to relieve the difficulties caused thereby. When not only the scriptures but the ecclesiastical powers had experienced the probing hand of the new method, then scientific investigations such as those of Hatch could be published under the name of the author without incurring trials for heresy. As long, however, as investigators remained partially responsible to ecclesiastical authorities, English New Testament criticism remained notably behind that of Germany's freer university men.

CHAPTER VI

CONCLUSION

The impact of the Industrial Revolution upon so specialized a phase of intellectual activity as New Testament interpretation and criticism is not at first glance apparent. The foregoing pages have told the story of advancing industrialism previous to 1900 and have cited the parallel advance of scientific New Testament criticism, noting in detail how the progress of the former distinctly affected the advance of the latter. It remains now briefly to draw a few significant conclusions.

The Industrial Revolution represents a process of long growth, with roots reaching back scores of years before James Watt invented his steam engine. These early changes in industry were slow, but they prepared the way for later and more sweeping advances. With agriculture in transition, commerce and industry were rapidly expanding, bringing to power a strong middle class. By concentrating money and labor in the hands of the rising industrialists, the landowning aristocracy was weakened in financial power and the way was paved for radical changes in social and political outlook. Here began the first effective challenge to the upper classes and the views which they represented, a challenge which was augmented in power by the more rapid industrial changes after 1760. The newer capitalistic groups questioned the entire plan upon which society had been operating, and brought about significant social and political readjustments. The entire concept of control and infallibility was under fire. Theology and biblical criticism had long been trying to make

scriptual accounts conformable to reason; now these studies felt impelled to challenge the infallibility of the scriptures themselves. Thus was begun the movement to apply to documents of scripture the same tests and methods which were applied to secular writings.

Growing industry set itself against government interference and restraints on commerce. Adam Smith gave voice to the sentiments of the industrialist when he presented his passionate appeal for political and industrial freedom, maintaining the supreme value of individual liberty and arguing that man's self-love is God's providence. Beneath this cry for commercial freedom was the general philosophy of the times, the contention that men should be free to deduce their own policies of action without the external pressure of restriction and authority. The significance of this attitude for the investigation of scriptures is evident on the surface.

An observable and significant result of the Industrial Revolution was its mechanization of life, which left an indelible imprint upon men's lives and attitudes. The methods of the natural sciences were perfected as was possible only in an age of organization. The Industrial Revolution and the economic application of science made the results of science observable. Scientific control over natural objects brought into question supernatural control. Things which had been regarded as special divine revelations were discovered to be the products of natural human development and subject to definite laws. The wonders of Jesus were interrogated with reference to scientific possibility. Men who had contacts both with applied science and with New Testament teachings began to feel sharp contrasts; they became fully conscious of the questions: "Who were Jesus and Paul? What deeds

did they actually accomplish and how did they accomplish them?" Revolutionized industry brought more and more people into contact with science. Industrial progress was dependent upon the application of science; thousands of people were in turn dependent upon industry and its advances. Science advanced on the principle that by obeying nature one might control it through the discovery of uniform laws. The discovery and use of these laws threw doubt upon theological explanations of the natural order. The authoritarian view of the world and of the validity of scriptures found itself beset on every hand by those who claimed the right to investigate dogma and scripture in the light of related phenomena. Interest in the scientific approach and its effects upon biblical records grew with the spread of industry, for industry was the application of science and its methods to the means of production. Those who worked daily under the laws of science could not fail to see a contrast so obvious as that presented by arbitrary authority pictured in scripture records.

The application of science through the Industrial Revolution brought the inductive method of analysis and study into dominance. Advances in mechanical efficiency came not by new derivations from authoritative general concepts, but by data recorded from individual experiments. The scientist will insist upon setting up postulates which will enable him to solve his problems. Science is to be tested by the success of its postulates, measured in the light of experience, observation, and any individual cases which may be studied. There is an irreconcilable conflict between dogmatic theory and scientific method: dogmatic theory insists on interpretation of individual facts in the light of an authoritative pronouncement; scientific method modifies its postulates to conform to the findings of the individual tests.

In no area was this method of science made so observably dominant as in the mechanical area, and industry was the practical application of mechanics. It is at once apparent that the spread of this inductive method into New Testament criticism would cause the removal of the dogmas of infallibility and of supernatural revelation, in order that scripture might be viewed in the light of its relation to contemporary historical data and to the findings of all branches of study.

The Industrial Revolution, too, brought about the development of concepts to test comparative efficiency. Machinery first brought the need for a general concept of the unit of work, the formulation of the idea of energy, a bookkeeping conception of the physical world. A producer could then compare alternative means of production and sources of power in terms of the units of work available in each. All of this, however, depended upon the reduction of natural phenomena to basic uniformities, the postulation of a world order in which each event is determined by its relation to the others. No scientific criticism of scripture was possible until its relation to other natural events or phenomena could be determined.

It has been noted in the course of this dissertation that the first thorough application of scientific principles to New Testament criticism appeared in the Germany of 1835, coming from the pens of David Friedrich Strauss and Ferdinand Christian Baur. Why should this occur in Germany, which was relatively undeveloped industrially, rather than in France or England, particularly the latter? In the first place, it must be noted that German criticism arose within the pale of the German university system. There the scientific biblical critic found an atmosphere conducive to exhaustive research. The spirit of the university demanded that

scholarly endeavor in this sphere should adjust itself to findings in other fields, that it should proceed upon principles justified in the light of all knowledge. Here at the university were gathered up and explored all the principles upon which the world operated, the findings which were results of industrial, social, political, and intellectual changes. The scholars whose influence can be seen most readily in the rise of scientific biblical criticism were university men. Michaelis, Eichhorn, Heyne, Wolf, Herder, Lessing, Gieseler, DeWette, Strauss, Ullmann, Weisse, F. C. Baur, and Bruno Bauer were all intimately connected with the German university system. Men like Strauss and Zeller who received early training at Tübingen removed for later work to Berlin and Marburg, demonstrating the fact that the university system as a whole soon felt the effects of advance in any individual university. Although disunity and unavailability of resources hampered German economic advance, it may be asserted with confidence that the principles of scientific research developed by the Industrial Revolution in England and to a lesser degree in France found their way with great rapidity into the researches of the German university system. That German research science had for years been committed to the principles of the Industrial Revolution was overwhelmingly demonstrated by the tremendous progress of industrial technology after the construction of the railway system and the unification of the German states had removed the last barriers to her Industrial Revolution.

In contrast to the spirit of the German university system which fostered scientific biblical criticism, note that the spirit of scientific research in France was almost exclusively confined to the French Academies, which did not embrace the field of biblical research. Church institutions alone pursued New Testament

research, and since they were controlled by Roman Catholicism in the main, all conclusions were settled before research could begin. Thus biblical criticism in France was entirely without the pale of those institutes where a scientific spirit reigned.

Also in sharp contrast to the German university influence was the English ideal of a liberal education, based upon traditional and conservative notions. It has been noted at length in Chapter III how English scientists in almost every field worked apart from institutions, publishing their findings often in foreign journals. Many of these men remained almost unknown to their countrymen; the views of great English scientists found schools of followers in France and Germany, found their way into German textbooks before they were well known to Englishmen. English societies honored and admired, but did not support, their great representatives; the scholars for their part often refused to be tied by exclusive academic duties or by official restrictions. In the universities, there was little attempt to pursue scientific research in the German sense of the term. Devoted to the ideal of a liberal education, there was no effort to advance specialization in concentrated areas; departments often remained so provincial that in the first half of the nineteenth century there were repeated complaints that higher mathematics were absent at Cambridge, that no philological studies were cultivated in either of the universities, and that philosophy was represented merely by Aristotle, Butler, Locke, and Paley. The universities persistently refused to cultivate any special methods or schools of thought. In the light of these dominating ideas and tendencies, it is not surprising that biblical research in the English universities fell into traditional molds, and found themselves decades behind German university research.

Another noteworthy contrast between German, French, and English biblical scholarship was in the matter of control exercised by ecclesiastical authorities. Research in the German university system was singularly free from the domination of church or state after the liberating influences of the eighteenth and nineteenth centuries. Early in the nineteenth century, the control of the various universities, which for centuries had been in the hands of the theological faculties, passed over into more unprejudiced hands. This removed one of the last possible restrictions to the growth of scientific biblical criticism. There prevailed in the nineteenth century almost absolute freedom in the actual carrying on of instruction in the universities. This freedom promoted the use of scientific methods which were coming into use in other departments of the university, and helped to avoid the estrangement between scientific thought and religion which was found in Roman Catholic countries or in those whose university influence was extremely conservative.

The freedom of the German biblical scholar stands in direct contrast to the rigid control exercised upon scholars in the Roman Catholic faculties of theology in France. French scientific criticism of the New Testament was almost impossible under such circumstances.

It is not to be denied that English criticism suffered from the conservative influence of the church and of the culture of which it was a part. German rationalism built upon the ruins of pietism; in England the opposite was the case, and conservatism was still profiting from the evangelical protest against rationalism as late as the nineteenth century. Inherently conservative, the English Church was thus further strengthened in its conservatism and barricaded against free investigation of the

scriptures. This attitude was forcibly demonstrated as late as 1860 by the storm which broke upon the heads of various authors represented in Essays and Reviews. It has been shown that English university influence failed to promote scientific investigation; in fact, that it retarded any effort in that direction. It is now apparent that the strength of the English Church acted to repulse the influence of the Industrial Revolution upon the methods of individual New Testament scholars. The fact that a vast majority of English biblical scholars, such as Jowett, Stanley, and Westcott were dependent upon ecclesiastical position and salaries is not to be forgotten. Thus any influences which may have urged the New Testament scholar to scientific production were largely stifled by a conservative educational atmostphere and a dominantly conservative church. Whereas German scholars accomplished their scientific studies in accordance with the spirit of their immediate milieu, English writers eventually attained the scientific approach largely in spite of their immediate surroundings. The New Testament scholar could not pursue his research within protecting walls such as the German university provided, nor was he free to do his work privately unless he braved the wrath of the church which supported him.

That the earliest scientific treatments of New Testament writings should appear in Germany was, therefore, not unnatural. Under her university system the scientific principles urged on by the Industrial Revolution found partial expression in the works of Semler, Lessing, Herder, Eichhorn, Gieseler, and DeWette. David Friedrich Strauss' Das Leben Jesu and Ferdinand Christian Baur's Die Pastoralbriefe, which appeared in 1835, illustrated the first thorough application of scientific method of scriptural study. These two works adhered strictly to a scientific postulate,

treating the scriptures as natural productions, exhibiting a method of critical inquiry hampered by no prescribed results, and relating their studies to all contemporary phenomena.

Scientific method in biblical research did not proceed even in Germany without opposition. Long after 1850 the methods used by Baur and his school were stoutly opposed by those who proceeded upon a more eclectic basis and by those who sought to correct his theories. Although the hypotheses put forward by Baur and Strauss were corrected in the light of later study, their method of procedure was propelled irresistibly along by the thorough Industrial Revolution which took place in the last half of the nineteenth century. In the last quarter of the century even the most ardent conservatives were forced to grant concessions to the findings of scientific study. Weizsäcker, Wernle, Pfleiderer, and Harnack represent consistent application of inductive science to the interpretation of the New Testament. In no other way could the student of the New Testament be consistent with the currents of his age and the methods of his contemporaries in other fields.

Not until 1855, when Benjamin Jowett published his exegetical work on Thessalonians, Galatians, and Romans, did scientific principles find their partial application in an English work. Jowett's own position was about midway between Baur's and the traditional ones as to the relation of Paul to the earlier apostles; the differences were not dogmatic but practical ones. Jowett's essay of 1860 contended that the Bible should be interpreted like any other book and regarded as a valuable portion of the study of history and antiquity. Scriptures should be read not with the help of custom and tradition nor yet in the spirit of apology or controversy, but according to the ordinary laws of human knowledge. In the years following 1860 the pressure of the

principles urged on by the Industrial Revolution gradually forced slight relaxation of factors deterrent to scientific criticism. Late in the century the work of Arnold and Hatch demonstrated that English criticism was in part converted to the scientific method. The work of Hatch demonstrated a thorough criticism of authorities and an appreciative insight into the conditions and causes of historical development. Thus even in conservative England the principles of scientific approach developed and promulgated by the Industrial Revolution proved too powerful to resist.

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